

CALIFORNIA MEDICAL JOURNAL.

VOL. XXIV.

DECEMBER, 1903.

No. 12.

Electrical Physiology or Electro-Chemic Energy *vs.* Oxygenation of the Human Blood.

ALBERT J. ATKINS, M. D., SAN FRANCISCO.

A Lecture delivered before the National Eclectic Medical Association at Indianapolis, Ind., June 11, 1903.

MR. PRESIDENT AND FELLOW MEMBERS :

After much study and careful experiment, I have concluded that the process of revitalization of the blood in the capillaries of the lungs is due to the action of electro-chemic energy, and that oxygen does not pass into the blood by osmosis.

In the following paper I submit to you an account of my experiments, and a brief history of the course of reasoning that has led me to this important conclusion, so widely differing from the present accepted theories.

Although the theory of osmosis has been generally received, it has not been proven. Thoughtful physiologists have admitted this; for instance, Dalton, in his "Human Physiology" says, page 537, "When we endeavor to learn the place and manner of oxidation in the living body, the attempt fails. There is no evidence of such direct action taking place in the circulating fluid, nor in any of the organs or tissues." Again, on page 257, he says: "The blood collects or disseminates substances which have already been prepared in other parts, and, as a general rule, conveys them unchanged to their destinations. Even a substance like pyrogallie acid, so readily oxidizable in an alkaline solution that it is employed for the quantitative determination of oxygen in the air, when introduced into the animal system passes through it unchanged and reappears in the urine. There is no evidence that the blood exerts anywhere a direct oxidizing action."

Further, in reference to this subject, "Howell's American Text Book of

Physiology," page 537, says: "Most of the studies have been made solely by determinations of the quantities of carbon dioxide given off in respiration, the results being taken as standards for the relative volumes of oxygen absorbed; but such deductions are of very uncertain value, and may be entirely misleading."

With such authorities leading the way to doubt, it is not presumptuous to turn to new lines of reasoning to find rational explanation for the vital phenomena taking place in the human system. Consequently I offer the following analysis of the existing conditions, with a feeling that it will bear the most exacting tests.

In the human lungs two great circulations meet—that of the blood, and that of the atmosphere. These circulations moving in opposite directions, bring together elements which have mutual attraction. Under the influence of heat these elements unite—generating electro-chemic energy, which purifies the blood, and thus sustains the life of the organism.

That oxygen and carbon are found in the chemical constituents of the blood can not be denied; but that these elements reach it by a process of osmosis is indeed very questionable. Neither can it be shown in a single instance that these elements unite in any form while they are circulating in the blood. In the course of analysis, it will be shown that the supply of oxygen and of carbon found in the blood and tissues reach the system through the route of digestion.

A strong argument against the theory of osmosis, or diffusion of gases lies in the fact of the greater resistance offered by living membranes, and by the pressure of the blood exerted against that of the atmosphere. The proof of greater pressure is shown by the hemorrhage which results if the smallest opening is made in the air-sac of the lung. Notice how carefully Nature guards the possibility of hemorrhage in tubercular lungs, by infiltrating large areas about the point of infection. Another instance is seen in the provision of an artery for the passage of venous blood from the heart to the lungs—the only place in the human system where an artery is used for the conveyance of venous blood.

In regard to filtration or osmosis, Howell says, in "The American Text Book of Physiology," page 156: "It has been shown that living membranes offer considerable resistance of filtration, even when liquid pressure on one side is much greater than on the other. Tigerstedt and Santessen, for instance, found that a lung taken from a frog just killed gave no filtrate when its cavity was extended by liquid, under a pressure of 18 to 20 centimetres—provided the liquid used was one that did not injure the tissues. If, however, the lung tissue was killed by heat or otherwise, filtration occurred readily under the same pressure."

In my own experiment on fresh lungs from the sheep, I have repeatedly

demonstrated that the lungs can be inflated with pure oxygen gas and they will keep so for forty-eight hours, without loss of oxygen. In these experiments the heart was always removed, and all blood-vessels leading away from the lungs were cleared of clots and left open. The lungs were kept in a normal salt solution, at a temperature of 98° F. At the end of the time mentioned the lung tissue showed signs of decomposition, owing to the action of the gas and water; consequently there was then a loss of oxygen.

Moreover, I have performed tracheotomy on the living animal, killing it as soon as the lungs could be inflated with oxygen gas and the trachea tied. In every instance, upon opening the thoracic cavity, the lungs were found to be inflated to their fullest capacity, remaining so for an indefinite period without loss of oxygen.

Furthermore, the living membrane of the lungs is protected from the diffusion of gaseous matter, by the mucous secretion from its secretory cells, and still more so by the extreme swiftness with which the current of life-force passes through it.

Living membranes absorb and secrete elements through organs which Nature has prepared for that purpose. These organs of secretion and absorption may be stimulated or sedated by various influences, and they mark the difference in Nature's methods of transferring elements in simple and in complex forms of organic life. My experiments prove that oxygen may be sealed in a pair of fresh lungs, and these can be carried about as though they were an oxygen bag.

It is the office of venous blood to collect waste products from the tissues, and carry them to the organs of exit. It has been mentioned, and it is a fact that all excretions of waste material take place through glands and ducts of organs, as in the skin and kidneys, and it would be unreasonable to consider the lungs an exception to this general rule of organic life.

It is estimated that about five hundred grammes of carboniferous, decaying animal matter are excreted from the lungs every twenty-four hours. It is claimed by some physiologists that all this mass of decaying matter passes out of the blood by exmosis during the time of expiration. Venous blood is exposed to the influence of atmosphere about one and one-half seconds; during this time it is supposed to give up carbon-dioxide, and to receive sufficient oxygen to furnish energy for the entire system.

There is no evidence that carbon-di-oxide is formed in the blood. Dalton, in "Human Physiology," page 257, says: "In the blood, the plasma consists mainly of organic substances in solution, and oxygen is abundant in the globules in a state of loose combination. But the union of carbon and oxygen does not take place in the blood."

The chemical analysis of venous blood shows more carbon in its composition than does that of arterial blood. When compared with inspired air,

expired air shows a gain in carbon in union with oxygen in the form of carbon-dioxide. It has been shown that the union of carbon and oxygen does not take place within the blood stream, hence it is obvious that the lungs excrete carbon, and that the union between carbon and oxygen of expired air must take place in the lungs, outside of the blood stream. It is evident that the larger portion of the oxygen of inspired air unites with carbon at this point, and therefore could *not pass into the blood by osmosis*.

The excretions of the lungs represent elements of decomposition, material from the tissues undergoing retrograde metamorphosis. In the "American Text Book of Physiology," page 944, the author says: "Through putrefaction hydrogen is liberated." Further, on the same page, he continues: "In putrefaction in the presence of oxygen, the hydrogen formed immediately unites with the oxygen, producing water; hence, notwithstanding the enormous amount of putrefaction in the world there is no accumulation of hydrogen in the atmosphere." The liberation of hydrogen from the decaying excretions of the lungs explains the presence of watery vapor in expired air. It is well known that there are but slight traces of hydrogen in pure atmosphere; it is equally well known that there is a considerable quantity of watery vapor in expired air. Therefore, it is evident that hydrogen thus liberated would, under the influence of electro-chemic energy, unite with oxygen of atmosphere, forming water, which becomes vaporized by the heated condition of the lungs. In this union between hydrogen and oxygen of air, together with the before-mentioned union of excreted carbon and oxygen of the air, will be found every molecule of atmospheric oxygen which is supposed to pass into the blood by osmosis.

Oxygen of air is a cooling, para-magnetic element; its molecules move in pairs. Under the influence of heat these molecules expand, thus becoming more gaseous; this disturbs their magnetic polarity and breaks their chemical bonds. When the bonds of chemical affinity between the molecules of any substance are broken by heat, expansion, electrolysis or other means, electro-chemic energy is generated. This energy is positive or negative in character according to the nature of the elements from which it originates.

Oxygen is found chemically combined with arterial blood. Before oxygen of air could unite with blood, circulating as it does in a closed system of tubes, it must be reduced to a fluid state. According to physics there are but two methods of reducing gases to fluids—these are by pressure, or by cooling agencies, neither of which conditions exist in the lungs.

The temperature of air averages from 60° to 70° F., while the temperature of the human lungs is nearly 100° F.; consequently, in the human lungs we have a cool current of air meeting the resistance of heated surfaces, a condition which forbids the reduction of gases to fluids but which favors electro-chemic action.

The temperature of venous blood is higher than that of arterial blood, and its energy is of a negative character, consequently, by law of opposite attractions, its energy and heat are drawn toward the new field of action caused by the molecular rearrangement of elements taking place in the lungs outside the blood stream. It must be kept in mind that heat is a form of electro-chemic energy, and the cooling, watery vapors of the lungs are a good conductor for it.

Draper, in "Medical Physics," page 234, says: "Chemical affinity, heat, motion, magnetism, electricity and light are convertible one into another." Massey, in his "Conservative Gynecology and Electro-Therapeutics," in a foot-note on page 39, says: "Chemic affinity is now understood to be identical with electric affinity."

The negative oxygen elements of inspired air meet the positive carbon elements which are excreted by the lungs from venous blood. Through the influence of heat molecular rearrangement ensues, and by the nature of the elements rearranged positive electro-chemic energy results.

It is a fundamental law of chemistry that molecular rearrangement, with chemical union, always produces electro-chemic energy. By the action of opposite attractions, and by the conductivity of oxygen elements the positive energy of the new field is drawn to the negative blood.

"Venous blood is distributed to the lungs by the pulmonary artery, whose terminal branches form a plexus of capillary vessels surrounding the air-cells. The air and blood are thus brought into intimate relationship being separated only by the delicate wall of the capillary. A capillary frequently passes through an aperture in the cell wall but never becomes altogether free from it, and no blood escapes into the air-sac during its passage."—Gray's Anatomy.

In the extremity of the bronchiae we also find non-insulation in the air-sac, showing that Nature has prepared the way for the transmission of electro-chemic energy.

In Gray's Anatomy, it is said: "The mucous membrane of the trachea and bronchial tubes is pierced by many excretory glands; it is also covered with columnar epithelium." This epithelium acts as a complete insulation to the escape of any electric energy produced within the tubes; but the terminal bronchial tubes lose their epithelium and muscular coat at about one-eighth of an inch from the most distant air-cells to which they may lead, and are thus reduced to a single basement membrane. Thus it also becomes non-insulated to facilitate the transmission of energy to the blood.

Residual air of the lungs, with the saline, watery elements, plays an important part in the conduction of electro-chemic energy to and from the blood. Residual air being heavier than tidal air, is drawn back and forth to and from the air-sac, transmitting the energy to and from the blood with perfect, rhythmic action, similar to the action of a to and fro current. Residual air of the

lungs always remains about the same in quantity; its quality is maintained by constant motion of its molecules, the supply of which is renewed by continual interchange with tidal air.

Venous blood is cooled slightly by evaporation in the lungs, and by loss of carbon and hydrogen.

The liberation of hydrogen from the watery elements of the blood, by electrolytic action leaves free oxygen in the blood stream, which accounts for the excess of free oxygen in arterial blood, as will be fully elucidated in the course of analysis.

The blood, as a whole, is dia-magnetic, that is, it has a tendency to throw out force from, and at right angles to its center. This being a fact, it would be impossible to form an attractive magnetic field in the blood current, if Nature had not placed para-magnetic iron with the 55 per cent of carbon in the hemoglobin.

The carbon attracted by the iron forms a magnet which, when charged with electro-chemic energy, creates a current in the center of the blood stream, causing this part to move more rapidly than the surrounding parts of the fluid.

Oxygen of venous blood, made free by the loss of hydrogen, is attracted to the positive carbon, and arranges itself in a loose manner at right angles to the carbon of hemoglobin. None of these elements unite on account of the inflow of electro-chemic energy from the atmosphere at this point. It is a law of electrolytic action that the movement of a current through a fluid decomposes its elements and prevents union which would otherwise take place. This action explains why carbon di-oxide is not formed in the blood; it also shows why there is no coagulation in circulating blood.

In experimenting on venous blood, I have submitted the coagulated blood to the action of currents of galvanic electricity with the following results: coagulated blood was made fluid, also its color was changed and rechanged, according to the application of the electrodes.

When venous blood is subjected to the action of an electric current the molecular arrangement is disturbed and altered. The instant a current enters the blood there is great activity among its elements—they begin to circulate freely, and each moves toward the point of electrical attraction. Carbon, hydrogen and all other positive elements are torn from their union with other elements of the blood, and collect at the negative pole of the circuit, while oxygen and all negative elements collect at the positive pole.

The carboniferous elements at the negative pole give to the blood its dark, venous hue, while those of free oxygen and other negative elements at the positive pole give the characteristic scarlet hue to arterial blood, showing clearly that electro-chemic action is the cause of change of color in the blood.

We have shown that energy results from the chemical changes which take

place in the lungs outside the blood stream. This energy conducted by the elements of residual air, and confined by the insulation of the bronchial tubes passes on to the non-insulated air-sacs and capillaries, where it enters the negative venous blood. The instant this energy reaches the blood it causes it to glow with a new life; its color changes by the vitalizing effect of the charge, and consequent rearrangement of its molecules.

Here is the beginning of the circulation of life. Here is the power which transforms venous into arterial blood and starts it upon its mission of maintaining life in the human organism.

In applying electro-chemic principles to the human organism it becomes necessary to use familiar terms common to electrical nomenclature, but it must be borne in mind that while the energy in the organism works upon the same plan as electrical energy everywhere, yet here we have a higher order, and a more complex arrangement of action. In the living organism we have something better than a machine, something that is self-adjusting, self-repairing, growing, constantly changing condition, therefore the comparisons are necessarily crude; nevertheless, they help us to mentally grasp certain principles which will lead us to a better understanding of phenomena which has hitherto baffled analysis.

There are two great sources from which the human system gains its supply of electro-chemic energy; one is from the atmosphere, the other is from the reduction of food elements. One is organic, the other is largely inorganic. The intermingling of energy from these two sources maintains organic life of the highest order.

It is now accepted by leading scientists that all matter is energy condensed into different forms. It is my opinion that energy is a form of matter in rapid vibratory motion.

All fluids and food structures used in the economy of the human system represents a certain refined, or stored energy, which under proper conditions may be liberated to perform functions in higher organic life. These elements have passed through many evolutionary processes of refinement. In the energy which maintains human life we find the blending of forces which are respectively the highest product of the organic and inorganic kingdoms of Nature.

In reference to the chemistry of the animal body, Howell's "Text Book of Physiology," page 962, says: "The chlorophyll-containing leaf of the plant, through the medium of the energy of the sun's rays, brings the molecules of water and carbonic oxide derived from the air in such a position with regard to each other that they unite to form sugar with the elimination of oxygen; this process is called synthesis—the construction of a more complicated body from simple ones.

The active, or "kinetic" energy from the sun required to build up the com-

pound is stored, becoming "potential" energy in that compound, and is liberated again in exactly the same quantity on the resolution of the substance into its original constituents.

So the amount of energy liberated in decomposition of a food in the body is exactly equal to the energy needed to build it up from its excreted constituents; and this liberated energy appears in the body as heat, work and electric currents."

The electro-chemic energy which is liberated from the reduction of food structures in the human system is negative, or lower in potential to that which is produced in the lungs from the atmosphere. The exchange between these two electro-chemic energies keeps in action that vast system of forces which we know as human life.

Physiologists must recognize that no chemical changes can take place in the human system without the liberation of electro-chemic energy from the elements undergoing transformation. The blood is the physical conductor of electro-chemic energy to tissues, organs and nerves of the human system. It is composed of many elements and structures, all of which have an especial purpose in the economy of nature.

Digestion prepares food structures to enter the circulation for further reduction. Chyle does not represent the final step in the reduction of food structures, as these must be reduced to energy before they are fitted to become a sustaining part of the vital organism.

The ultimate step in the reduction of structures transpires in the blood; at each circuit of blood some of the compounds are torn apart by electrolytic action; each time a compound is broken a certain amount of stored energy is released from the elements of that compound, and thus becomes a part of the sustaining energy of the system. When structures are completely reduced they are not destroyed, but having parted with their portion of energy they are no longer useful to the system, and consequently pass away from it as waste, or retrograde products, or elements.

Every particle of food that is used by the system must be converted into energy before it plays its part in the functions of the organism. Here is the secret of vitality; here we gain the force that keeps our bodies alive. These products of digestion act similarly to the zincs and carbons of a battery; they are slowly converted into force by numerous rounds of circulation in the system. At each circuit they are acted upon by various organs, each one of which has its own peculiar function. It is thus that the products of digestion finally reach that most refined condition known as vital force.

When the products of digestion are poured into venous blood they consist of a fluid which is composed of many structures. Water forms a large percentage of this compound; from the source of digestion, also, comes the supply of oxygen, carbon and other elements, which must be subjected to

electrolytic action in the blood, in order to render them useful in the organism. When the watery elements of digestion undergo electrolytic action in the blood stream the bonds of union between hydrogen and oxygen are broken; this frees a sufficient supply of each of these elements for all uses of the system. By this method, and from this source the system is supplied with needful elements.

The two great circulations, of air and of blood, move in opposite directions, rotating with as absolute a precision as the planets of the solar system.

In an electrical sense, the capillaries of the lungs and the capillaries of the systemic circulation represent a positive and negative relation toward each other; yet, taking the blood as a whole, the positive and negative poles of the atmospheric electro-chemic circuit are in the lungs; that is, the arterial blood, which is positively charged, starts out from the lungs to perform its office to the system, and represents the outgoing current of energy. Venous blood, which has become negative through loss of a portion of its atmospheric energy, returns to the lungs for revitalization, and represents the return current of negative energy.

Arterial blood is the distributor to the system, while venous blood is the collector from the system. The latter is loaded with carbon and hydrogen—positive elements which have been decomposed during their rounds of circulation. According to electric laws, the positive elements decomposed in the atmospheric circuit would naturally collect at the negative pole for excretion.

The arteries leading from the heart are strong, cylindrical tubes, insulated throughout their length for the purpose of confining the blood and its energy, thus conducting the energy to its proper point of distribution, the capillaries. If it were not for this insulation of the blood vessels the dia-magnetic action of the blood would cause the energy to be distributed too soon. The arteries rapidly diminish in size, until in the capillaries they become microscopic, and lose their insulation, thus permitting free electrical exchange in the tissues.

In the capillaries, the minuteness of the channels causes resistance to the passing electro-chemic energy in the blood. This resistance produces electro-chemic heat, with consequent molecular rearrangement and change of color. The heat produced in this manner helps to maintain an even temperature in the body. Oxygen is set free at this point to enter the lymph spaces, and carbon is collected from the tissues. Here, also, the nerves terminate in such a manner as to be in direct communication with the stream of life, and thus become the finer conductors of vital energy to all parts of the human system.

Scudder, in "Principles of Medicine," page 47, quotes Prof. Youmans as follows: "As it is now admitted that no chemical change can occur without electrical excitement, and as the human body is a mass of rapidly changing chemical materials, it must be the theater of extensive electrical movements;

though to demonstrate this has been one of the most difficult and delicate problems of science. The blood is an alkaline fluid, while the juice of the flesh is acid, and the two liquids are only separated by the thin walls of the vessels. By the action of these fluids there must be in every mass of muscle myriads of electric currents. Matteucci has proved that currents of electricity are circulating in the frames of all animals. The smallest shreds of muscular tissue have been proved by Dubois Raymond to manifest currents, the longitudinal section being always positive to the transverse section.

Every cell in the human body is an organ which, under proper stimulus of electro-chemic energy, absorbs, secretes or excretes elements suitable to the function it performs in the living economy.

When the blood passes from the capillaries into the veins it is in a negative condition, having parted with the greater portion of atmospheric energy. It travels slowly in consequence of loss of energy, but the increase in number and the constantly widening channels of the veins offer little resistance to its passage, and thus facilitate its return.

In traversing the circuit of circulation there are many changes in the molecular arrangements of the elements composing the blood. This causes seeming losses and apparent gains, but if we examine these from an electro-chemic standpoint, and with due consideration of the digestive supply, we shall find that they consist in rearrangement, and wherever an element is given up to the tissues its loss to the blood stream is supplied from some other organ, before the circuit is completed.

Thus we can account for all of the elements made use of in the maintenance of the system, and know the source from whence they come.

When venous blood leaves the heart to enter the lungs for revitalization, it has in its composition all the elements of arterial blood, except the energy which the latter had received from the atmosphere, and to regain which venous blood returns to the lungs. For without this energy which passes from the atmosphere to the blood there could be no reduction of food elements in the blood stream, they would remain unchanged—their stored energy could not be released because their bonds of chemical union would remain unbroken.

The human organism, as a whole, is a vast electro-chemic laboratory, wherein are generated electro-chemic forces whose action sustains the life of the body, keeping its fluids in circulation.

These forces remain vital through constant interchange with those of the atmosphere; the point of this interchange is the lungs. The electro-chemic forces of the body are liberated through reduction of food elements.

The atmospheric electro-chemic energy is generated in the lungs by molecular rearrangement and chemical change of atmospheric gases. The energy in the human body is negative to that of the atmosphere, hence there is mutual attraction and circulation of energy between them; this constitutes the

circulation of life, bringing together, as it does, the highest product of all Nature's Kingdoms.

We have shown how the blood receives positive electro-chemic energy in the lungs—how this energy acts upon the various food elements in the blood in such a manner as to release their contained or stored energy, which is negative to that of the atmospheric energy. We have noted the insulated blood vessels, and have seen how this insulation is removed within the capillaries so that energy may be taken up by the nervous system to be used in the economy of the organism.

We have seen how this return flow of energy through venous blood collects the waste or retrograde products at its negative pole, for exit through excretion. These waste products, positive in their nature, are now descending in the scale toward lower forms of life, where Nature, in her wonderful conservation of energy, utilizes them.

Attention has been called to the fact that carbon and hydrogen decomposed by electrolysis in the blood stream collect at the lungs for excretion, and when excreted these elements leave in the venous blood free oxygen for molecular rearrangement in arterial blood.

It has been shown how liberated hydrogen, in the presence of oxygen, unites with that element to form the watery vapors of expired air, and how carbon unites with oxygen, forming carbon-dioxide, producing the positive energy which purifies and renews the life of the blood. These elements have now performed their office in the human system, and are expelled from the lungs as dead, or devitalized air.

The effete gases thrown off from the lungs are fifty times heavier than atmosphere, consequently they are naturally attracted toward the earth's carboniferous plant life. Botanists tell us that under the influence of sunlight, plants absorb carbon from the air, and excrete oxygen; hence it is readily seen that the vegetable kingdom has a great influence on the purification of the atmosphere.

Nature's methods are perfect. In her economy she uses the retrograding elements to generate or liberate energy which is ascending. The disintegrating elements from one kingdom become the food supply for another, and all kingdoms are united by that subtle force, electro-chemic energy. Nothing is lost. Matter is reduced to energy, and energy is condensed into matter—neither can be absolutely destroyed. The changes which we witness are those of reduction, change of form. By a close study of the laws of resistance to passing energy we shall ultimately learn the secret of how cells are formed from condensing energy.

Solar energy mingling with gaseous elements imparts some of its electric life to them, causing motion and circulation.

Too much stress can not be placed upon the fact that it is the life-giving

influence of the electrical sunlight, which imparts to growing vegetation its stored electric energy, and to the atmosphere the qualities which make its elements play so important a part in the maintenance of life.

Chas. Dennison, A.M., M.D., of Colorado, in his valuable paper on "Devitalized Air Toxæmia, a Prime Cause of Tuberculosis," says: "The life of the air consists, to a greater extent than has been heretofore recognized, in the molecular mobility of its atoms caused by the sun's influence. The diffusibility of the air, its easy and ceaseless motion, due to changes of temperature in different strata, are forces of molecular activity which, under the influence of some electrical or other force yet to be fully understood, probably impart the life-giving principle to the atmosphere. The restraint of this molecular motion, and consequent limitation of vitality, are in direct proportion to the deficiency of ventilation. Herein, I conceive, lies the great mistake of our civilization, i. e., in relation to our mode of living. Here is to be seen the need of education, that this cause of disease may be realized."

Further he says: "There may be a new principle or ingredient yet to be discovered in the air, which governs the arrangement either of its atoms or molecules, and thus make it respirable. Indeed, we seem to be confronted with the most important inquiry, the answer to which would be of the most inestimable value, namely, what is the relation of atmospheric electricity to the respirability of air? In other words, how does the breathing of air through its oxygen be only partially consumed, make it unfit for again sustaining life till it is re-electrified or re-vitalized? Or again what, if any, is the inhibitive state of oxygen in the air, especially in once-used air, which renders it non-absorbable or its use nugatory in sustaining life."

I think it is not presumptuous to say that the preceding analysis to a great extent answers these questions. I repeat with Dr. Dennison, that the lack of proper ventilation and open-air life is the bane of civilization. If the human lungs had plenty of moving air, without draught, and the human race had sufficient good food, with less worry and waste of energy in gaining the necessities of life, there would be such a decrease in the death-rate from consumption or tuberculosis, that within a period of a few years the disease would scarcely be known.

We must remember the great amount of carboniferous, decaying matter thrown off from the lungs every twenty-four hours. If, for any reason, the lungs are not cleared of this vitiated animal matter, what is the result? They become clogged, and proper electrification of the blood cannot take place. The mass becomes a hot-bed for the generation of tubercular bacilli which appear by the million, as a result, and not as a cause of this scourge of the human race.

Too much stress can not be laid on the subject of ventilation. In this age all buildings are so constructed as to nearly exclude air; as a consequence

we are fast developing into a race of consumptive and nervous wrecks. Every infant born must fight its way in life against the fearful odds of vitiated and non-electrified air; under those conditions thousands of them perish before they even taste the first fruits of happy childhood with its open-air life.

Go into the crowded theaters and churches, you will find them a hot-bed of disease and corruption, all on account of a lack of air. People crowd together, breathing over and over again the devitalized air—and then they wonder why they feel so stupid, why they take cold so easily. If the doctors and ministers of the world would only teach the people the value of fresh air, they would indeed be teaching the laws of life.

Everywhere we can see the great necessity of proper electrification of the blood, and its influence upon the health and harmony of the individual. It is obvious that the system will not receive its proper supply of energy, and the whole organism will suffer in consequence, if the atmosphere is poor or devitalized.

For example, let us take a case of carbon-monoxide poisoning. Here we have carbon instead of oxygen passing into the lungs, and what action should we expect? The carbon of the gas meets the carbon and hydrogen excreted by the lungs; now these molecules are repellant, or dia-magnetic to each other, consequently molecular rearrangement can not occur and no electro-chemic energy results. Gradually the carbon ceases to be excreted by the lungs, venous blood remains unchanged and passes into the arteries, making a few circuits, and is found as such when the post-mortem is made by the coroner. In his mistaken diagnosis, he believes that the carbon has passed from the carbon mon-oxide gas by osmosis and has formed a union with hemoglobin, but the real action which takes place is the union between unexcreted carbon of venous blood and hemoglobin. The reason for this union is because the blood fails to gain its supply of electric energy from the atmosphere; the moment this supply ceases there is nothing to prevent the elements having attraction for each other within the blood stream from uniting.

The lungs are the all-important center of physical life; their motion is synchronous with that of the brain. "Man does not live by bread alone," he may exist for weeks without food, for a less time without fluid, but if he is deprived of air and of that necessary energy which he gains from breathing it, he dies within a very few moments.

Notice the horse, as he draws a heavy load, his dilated nostrils show his struggle for breath. Give him a few moments to catch his wind, and he lifts the load to the brow of the hill. Observe the athlete, when performing feats of strength, see how he pauses to renew his vital energy by deep-drawn breaths; watch his chest rise and fall, as the air rushes to and from the

heated surface of the lungs. Why does he do this? His weight is nearly the same, his stomach may be well supplied with food, yet something is needed to enable him to continue his activity—it is electro-chemic energy that he gains from breathing atmosphere, which creates the breath of life.

At all times and under all conditions, there is a manifest necessity for the revitalization of the blood. Every cell with its nerve connection, every organ with its cylindrical, insulated tubes, indicates to the thinking mind that this great work of renewal is that of an electro-chemic process. What the sun is to the earth in the renewal of atmospheric life, the lungs are to the blood in the renewal of its life.

The organs that propel the blood stream never sleep. Night and day the lungs, heart and nervous system labor in perfect accord to keep the vital energy at a proper "potential" or standard which we know as health. Even in sleep this work goes on. Other organs may rest, but these maintain an incessant activity. While the brain reposes the system has time to accumulate energy whose supply is continually drawn upon during activity. If our rest be perfect we awaken with bouyant spirits and with nerves tingling with a charge of new life; but if our sleep be broken, if we toss to and fro, the energy does not accumulate and we arise exhausted; we are using our forces faster than the great batteries can supply them. We can not digest our food for lack of energy; we have no resistance to the opposing forces about us, and are thus in a condition for the ravages of disease.

In this age we are still taught that disease is an entity—a microbe, a devil; something that must be driven out by some powerful antiseptic, or killed by poisonous serum.

All this is contrary to nature. It can bring nothing but disappointment to the physician and sorrow to the suffering millions of earth. In the name of progress I must emphasize the fact that the primary cause of all disease is a lack of life, a lowering potentiality of the normal electro-chemic forces of the human system.

OLIVE-OIL IN THE TREATMENT OF HEMATOMATA.

Dr. Camescasse (*Rev. de Therap.*) advises the application of olive-oil in all cases of contusion and hematoma. No rubbing in is necessary—it is indeed painful and therefore to be avoided—but the oil is simply sprinkled on or applied on lint. If the skin is broken, a previous cleansing with some antiseptic is advisable. The mode of action of the remedy is not clear, but the rapidity and effectiveness of its operation are said be remarkable. A black eye thus treated disappeared so quickly and completely that the victim was inclined to complain on the ground that he had no visible injury to show to the police.—*Mass. Med. Journal.*

DIRECT MEDICATION

Specific Indications

ARE MET BY

Normal Tinctures

THEY ARE

Minim for grain in strength

Standardized by Assay and Physiological test

Prepared from fresh drugs

Extracted with pure grain alcohol

Bright, Clean, Reliable

Economical, because they contain no waste material

Do not prescribe them because they bear a certain label, but because they are the best that science, skill and long experience can produce.

Send for revised edition of our booklet entitled "NORMAL TINCTURES," it gives the therapy and doses of 145 of these NORMAL TINCTURES and is sent free, to physicians only, upon request.

The WM. S. MERRELL CHEMICAL CO.

Cincinnati, O.

New York
96 Maiden Lane.

Chicago
231 Lake St.

New Orleans
426 Camp St.

San Francisco
19 Stevenson St.

BETTER ELASTIC GOODS

WE MAKE EVERYTHING in this line that can be made on a loom, embracing Garter, Knee and Thigh Stockings; Garter, Knee and Thigh Leggings; Anklets, Knee caps, Thigh pieces; Shoulder and Elbow caps, Wristlets, Mittens, Abdominal and Umbilical Belts, etc.

OUR FACILITIES are so complete that we make and forward orders from one to three days after received.

OUR MACHINES are equipped with the latest improvements for Knitting Surgical Elastic Hosiery; we use the very best materials in Silk, Thread and Rubber; We employ only competent workmen.

To secure absolute accuracy, measurements should be filled out on our measurement diagrams, which we will cheerfully furnish.

TANNER DRUG CO.

214 S. Spring St., Los Angeles, Calif.

SOUTHERN CALIFORNIA DEPARTMENT

EDITED BY

O. C. WELBOURN, M. D.

303 GRANT BUILDING, LOS ANGELES, CALIFORNIA.

EDITORIAL.

The regular November meeting of the Los Angeles County Eclectic Medical Society was held at the offices of Drs. Perce and Harvey at Long Beach. An encouraging roomful made the meeting a success and a goodly number sent regrets, which, in a measure, compensated for their absence. The inaugural oration of the new President, Dr. J. C. Solomon, was enthusiastically received, being opportune and full of the genuine spirit of eclecticism. Dr. Harvey's paper on "Pneumonia and Eclecticism" was the *piece de resistance* of the meeting and it was worthy of its author. It will appear in the next issue. The discussion of this paper elicited an unusual number of apropos

clinical observations which are unfortunately lost to all but the hearers.

The next meeting will be held at the residence of Dr. Solomon, 1044 S. Bonnie Brae Street, Los Angeles, on December 5th, at 8 p. m.

It may interest the Eclectic profession, of this part of the State especially, to know that Dr. Ketchum, during his visit in November, expressed himself as charmed with our genial climate, as well as being particularly interested in the outlook for eclecticism in Southern California. We would not regard it as a seven days' wonder if the Doctor should authorize us to announce his decision to cast his lot with us in the near future, particularly if Mrs. Ketchum, who remained here to escape the rigors of the Nebraska winter, reports favorably.

QUERY BOX.

Conducted by L. A. Perce, M. D., Long Beach, Cal.

I would be glad to have the Eclectics, of not only Southern California, send in queries, but from any part of the State or outside the State. I shall endeavor to answer all that come, not perhaps correctly, but the best my experience leads me to believe, and if at any time this department reflects anything contrary to the experience or belief of others I will be glad to give their side of the question. This is not a department for myself alone to air my personal opinions, but a department for the interchange of ideas; thus may we all find some thread of hope on which some time may hang our desires of doing everything possible for our patient.

"What is a good diuretic in a case of lung infection, where temperature runs high and urine scanty?"

I would depend largely upon digitalis, possibly in connection with spirits nitrous ether, and I really prefer the digitalis in infusion. The scarcity of urine is largely due to the excessive temperature and enfeebled heart action.

"What is your method of treatment of a carbuncle on back of neck?"

As soon as softening is evident, I freely incise in any and all directions necessary to reach the involved parts. I then freely dissect out all the necrotic plugs I can even down to the sound tissue, thus destroying all the pus bearing portion I can reach. Cleanse out thoroughly with pyrozone, which is a three percent. solution of peroxide of hydrogen; cleanse this with satu-

rated solution boracic acid, and dress as required under conditions existing. These are the local measures I invariably adopt. Be sure and cut plenty.

"Is tuberculosis frequently a sequela of measles?"

I firmly believe that one must have some predisposition, either by family taint or from some former condition of self, possibly from dissipation or wrong living, for one to become infected with tuberculosis. In such who may come under this head, I think it frequently possible to trace the first evidence of infection to a case of measles. I doubt very much if we may charge the direct cause alone to measles, but we can certainly in some cases charge this disease to being the indirect cause of calling into activity a latent influence, which perhaps has not before even been suspected, and from the time of sickness from the measles, we find our patient going on to an active generation of tubercular tendency.

Long Beach as a Health Resort.

E. R. Harvey, M. D.

The physician practicing in a country subject to marked variation of climate experiences great difficulty in managing his cases of nose, throat and lung troubles. These cases may progress very satisfactorily during the summer months, but with the advent of sudden changes of temperature improvement ceases or the patient loses all he has gained. This is particularly true of catarrhal diseases of the nose and throat.

That tuberculosis in its incipency

can, by proper therapeutic measures together with a suitable climate and surroundings, be cured; and that even if the disease be somewhat advanced, life may be greatly prolonged, is conceded by all. Even though we cannot save our patient's life we can place him in a condition where he will be comparatively comfortable. This being true each case should be studied carefully and a locality chosen wherein conditions, climatic and otherwise, are best suited to the patient.

Southern California presents a variety of climate from which a locality may be chosen suitable for almost any of the conditions in question. A large portion of the cases of catarrhal and tubercular troubles of the nasal and respiratory passages will be greatly benefited by a low altitude near the ocean, and Long Beach by its great natural and artificial advantages presents an ideal spot for any one seeking health or pleasure.

The climate is semi-tropical, being located at about 34° north latitude. The summers are mild and pleasant. The mercury rarely reaches 90° F. and the temperature is always modified by a cool breeze from the ocean. There is no rain from about June until October or November, and there is a reign of almost continual sunshine.

The winter season presents no marked contrast; flowers bloom continually, frost is almost unknown, and snow never falls. The rainfall is moderate, averaging about five inches annually. Severe storms never occur, and semi-tropical fruits grow in great abundance.

The city of Long Beach has a resident population of about 6000 and is growing rapidly. Throngs of people come here during the summer to get away from the heated interior and leave in the fall when many come from the East to spend the winter. The citizens spare no pains to make it a pleasant camping ground for the tourists. The school facilities are second to none, and new buildings are being added to meet the constantly growing needs.

The sanitation is up to the standard, but a new sewer system is being inaugurated which, when completed, will be as nearly perfect as sanitary science can render it.

The water supply is derived from artesian wells which are sunk to a depth of from 800 to 1000 feet. This is furnished by two companies from one of which the water is not stored and never sees the light of day until drawn from the hydrant. It is clear, pure and contains a minimum of organic matter.

Long Beach is built on a bluff 20 to 25 feet high. Between the bluff and the ocean is a strip of sand several hundred feet wide which remains dry even at high tide. This is an ideal place for those desiring to spend a few hours in the open air and feast the eye on the ever changing beauty of the "Mighty Deep." Between this dry sand and the surf at low tide is an additional hundred feet or more, which, pounded solid by the breakers, makes one of the most elegant of driveways.

The surf is admirably adapted to

bathing, which may be indulged in during the entire year, as the variation of the temperature of the water does not exceed 10° F. A new bath house, erected recently at a cost of about \$100,000, is fitted with a tank 60 x 120 feet where those who wish may bathe in water at a higher temperature. There is another about half as large for the exclusive use of ladies.

A pleasure pier bridges the breakers and extends 1750 feet from the bluff to deep water. This structure is soon to be replaced by a new and much improved one fitted with a double deck and at an estimated cost of \$100,000. In connection with this pier and immediately above the surf at high tide is a large pleasure pavillion always open to visitors where concerts by one of the best bands in Southern California are given every afternoon and evening during the entire year.

While our visitors are provided with all manner of healthful sport, their spiritual welfare is assured, there being eight elegant churches efficiently officered and well attended, whose influence guarantees the high moral standing of the community.

Long Beach is pre-eminently a town of schools and churches; but that for which we boast with greatest pride is the fact that there is no saloon.

On our southern horizon is the mountainous island of Santa Catalina extending for a distance of thirty miles; on the west are the Palos Verdes hills 1300 feet in height and to the north are the San Bernardino mountains. Thus are we protected from the dust storms from the south and southwest,

the fog bearing winds from the west and the hot blasts from the desert on the north.

Much more might be written about this great country, its climate, resources, people, quaint old relics of early Spanish settlements, etc. Tourists are captivated, many remaining permanently. We who live here think it the "Eden" of the West. Its cloudless skies, its balmy air, its tropical vegetation, all prompt us to imagine that Tom Moore had in mind some of our adjacent islands when he wrote:

"Oh, had we some bright little isle
of our own,

In a blue summer ocean far off and
alone,

Where a leaf never dies in the still
blooming bowers

And the bee banquets through a
whole year of flowers,

There the sun loves to pause

With so fond a delay,

That the night only draws

A thin veil o'er the day."

Climate of San Bernardino County.

Henrietta C. Dorman, M. D., San Bernardino, Cal.

When one thinks of writing about the climate of a single county, it would seem as if little could be said; yet San Bernardino County contains fourteen million acres. It is larger than New Hampshire and Vermont combined, and has resources undreamed of by persons who are strangers to this locality.

The County is divided into two distinct parts by the San Bernardino range of mountains which extends from the western to the eastern boundary. Al-

though the northern part is called the Desert portion, yet there are many thriving little towns located there. On the mountains themselves are large forests of pine, hemlock, oak and cedar. In the southern part lies a beautiful valley 1000 feet above sea level. The oranges, lemons, grape fruit, apricots, peaches and grapes raised in this valley are unequaled. Roses are in bloom the year round.

Invalids coming here can be comfortably situated at any altitude desired, from 1000 to 7000 feet above sea level.

One of the greatest mistakes made in locating patients for the benefit of health is, in selecting a place where there is a great difference in the altitude from that in which they have been living. A gradual ascent is very much better. We have patients, though, who are benefited by the extreme change; for instance, those suffering with asthma breathe comfortably and easily at once upon reaching the pines. To produce a permanent cure, they must remain there for some time the length of which is proportionate to the length of the disease. Young patients suffering with asthma are permanently relieved by living in the mountains a few years. I have sent to the mountains and desert children who could not breathe in the schoolroom, and they came back to the valley with all symptoms of asthma gone; nor did they return.

Our high dry altitude also benefits phthisical patients. Not the kind where there is a rapid breaking down of lung structure with cavities. Those suffering with that form of phthisis derive

more benefit at the foot of the mountains, where they are sheltered even from the winds, and the elevation is moderately high; to suddenly place an exhausted patient with rapid pulse in a high altitude only hastens the end. The kind benefited is that where there is a plugging up of air cells with caseous deposits. The high altitude stimulates the circulation and the cough clears the air cells again and the patient improves.

The benefit little patients, suffering from whooping cough, derive from the change to a high dry altitude is in some instances marvelous. One of my little patients who had suffered from a succession of diseases, measles, pneumonia and finally whooping cough, was reduced to a mere skeleton and too weak to walk. During the night the child had from twelve to twenty spells of coughing and vomiting. It was the most stubborn case I ever treated, I could find nothing that proved beneficial. We took the child to an altitude of 3500 feet. The first night she coughed and vomited twice, after that she retained all of her nourishment, and at the end of two weeks the cough had disappeared entirely and the patient was gaining rapidly.

As the atmosphere of this locality is dry, it is beneficial to patients suffering from rheumatism. It has always been a question to me whether rheumatic patients were benefited more by the dry climate or the hot mineral baths. This county possesses many hot springs. At the foot of the famous Arrowhead mountain at an elevation of 2036 feet, there are natural hot springs with a

temperature of 190 and 170 degrees. These springs and other warm sulphur springs located in the valley have proven beneficial to rheumatic patients and have a large patronage from such sufferers.

Bronchitis, phthisis, asthma, whooping cough and rheumatism are diseases that require a dry atmosphere. San Bernardino County is comparatively free from fogs. It is especially adapted to delicate constitutions that need sunshine and out door exercise. Here the sun shines almost every day in the year.

While the thermometer runs up over 100 degrees at times in summer, the nights are always cool and bring refreshing sleep. A prostration from heat in this locality is unheard of, nor do we have storms accompanied by thunder and lightening as in the eastern states.

This place is not a panacea for all ills, but for respiratory lesions our locality supplies more of the recognized requirements for their treatment than any I have ever known.

The city of San Bernardino is modern and progressive in every respect. We might travel the world over and not find views such as we see from any point in San Bernardino; summer, autumn and winter in a single view, the valley with its flowers and fruit and as the eye travels upward, the snow-tipped mountains.

A Case of Ventro-Fixation,

O. C. Welbourn, M. D., Los Angeles.

Retro-displacements of the uterus are frequently met with, and, if not

corrected, bring on serious pathological conditions and concomitant disturbances. The causes thereof are many and varied, though the most prolific is subinvolution following an abortion or a delivery at full term.

The local symptoms are usually distressing; the sympathetic symptoms often profound. Neither class need here be enumerated.

A tampon treatment will relieve a small percentage of incipient cases; a carefully selected course of electrical treatments will relieve another and somewhat larger class; but fully 90 per cent. of all are distinctly surgical.

Many operations have been devised to overcome this difficulty, all of which, with one exception, are applicable to only a limited number of carefully selected cases. My experience has been that ventro fixation, when properly done, absolutely cures each and every case. This operation is easily performed, and the mortality is low, less than one per cent. It has not been unanimously accepted because of the theoretical difficulties that the patient would afterwards experience in carrying a child to full term. To my mind this contention is untenable and the following case is reported in support of the statement:

Mrs. W.—age 42, mother of three children, reported a gradual loss of health and strength for several years; indifferent appetite and irregular action of the bowels; palpitation of heart and fainting spells. Analysis of the urine showed 72 grains of sugar for each 24 hours, but no albumen. Physical examination showed a sound heart and

lungs, an atonic gastro-duodenal indigestion, an enlarged liver and tympanitic bowels. The bladder was irritable. A complete retro-flexion of the uterus with medium prolapsus was present. Her history indicated that this condition was caused by a post-partum subinvolution twelve years previous.

She had recently taken a systematic course of electrical treatments from a physician of unusual skill in this line of work, with no permanent relief.

I advised an operation and on Jan. 25, 1902, at the Los Angeles Hospital, a ventro-fixation was performed after the manner of Kelly, very heavy silk braid being used to anchor the uterus firmly to the sub-peritoneal fascia. The incision through the linea alba was closed by interrupted sutures of heavy silk braid, instead of silver wire. No serious complications ensued and in due course of time the patient returned to her home.

Her appetite gradually improved, the bowels became regular, the sugar disappeared from the urine and she gained flesh and strength very rapidly. She did not menstruate, but this condition was ascribed to the menopause. The patient went east on a visit and I did not see her for three months. On her return an examination showed a pregnancy of about five months. She had not had the usual discomforts of pregnancy, and no unusual symptoms developed later. Three hundred and fifty days after the operation, at the German Deaconess Hospital, she was normally delivered of a nine and a half pound boy. Subinvolution proceeded rapidly. The retro-flexion did not re-

cur. There was perfect recovery. At this writing, nearly two years after the operation, both mother and child are enjoying perfect health.

It is worthy of note that this ventro-fixation was performed on an unfavorable case with satisfactory convalescence; that impregnation occurred very soon afterwards, that no distressing symptoms developed during gestation or delivery, that the retro-flexion did not recur and that the patient is now in possession of good health.

Treatment of Burns and Scalds.

Dr. B. Roswell Hubbard, Los Angeles, Cal.

Of the emergency cases, none call for more prompt and effective treatment than do scalds and burns. The medical man should keep remedial agents within reach, and read up on the modern methods of handling traumas resulting from these common accidents.

Burns may be received in numerous ways, and surgical writers in common, in discussing this subject, have divided this traumatic lesion into six degrees each differing from the other in intensity of pain, destruction of tissue, and shock. Suffice it to say that this traumatism will be met with simply as a hyperemia of the skin, to that of complete carbonization of the affected area.

A guarded prognosis will be given in extensive injuries of this character, owing to the constitutional disturbances produced. We are all interested in knowing what to do to relieve the acute suffering and conserve life.

Many are familiar with one or more popular remedies for the cure of slight burns, yet few are conversant with effective remedial means for the more serious lesions.

To exclude the air, and reduce the acute inflammatory condition of the injured part is the first step in the process of a cure. To accomplish this, cover the affected area with absorbent cotton saturated with a solution of salicylic acid and borate of soda, three drams of the former to one ounce of the latter to a gallon of water, to which is added three drams of glycerine, the solution to be kept at a temperature considerably below that of the body and constantly applied. This will be so comforting, if persistently applied, that it will be gratefully received by the sufferer.

The acute symptoms having subsided, the injured parts will be dressed once or twice a day with a mixture composed of

Oxide of Zinc—one-half ounce—

Iodosyl—three drams—

Vaseline, Lanolin—equal parts—
to make four ounces.—Mix.

To assuage the acute pain in severe cases, the patient should be given an anodyne, or frequent whiffs of chloroform, or both, as the case may demand.

Where the lesion is of the fifth and sixth degree, shock will be a factor to reckon with. Here stimulants in the form of heat, hypodermics of brandy, digitalis, ammonia, and atropia may be demanded, followed by peptics, tonics and a nutritious diet.

The functions of the kidneys and bowels must be kept in mind. Broken

doses of sulph. of magnesia every two or three hours in a half glass of water will keep bowels and kidneys regulated; if not the latter, dry cups or hot fomentations will have to be resorted to.

Those cases presenting high fever will demand drop doses of tinct. of veratrum every hour or two. In suppurative cases add ten drops of echinacea to each dose during the day, and bromide of sodium at night to relieve possible restlessness.

Much might be said in this connection relative to ulcers and deformities following burns, but space forbids; every case of this nature must dictate or outline its own treatment, and pointers along this line may be found in all of our modern works on surgery.

In those cases where the integument remains intact, but raised up in large blisters, it is well to let out the serum by incising the blebs, that the antiseptic solution may the more readily act upon the traumatic lesion, but do not entirely remove the elevated tissue.

Sufferers from cramp, *Popular Science* says, will find instant relief by this simple method: When attacked by the malady, turn up the toes (ankle motion) as far as possible. This draws up the muscles of both the calf and thigh and relief comes at once. Many bathers at seashore resorts have followed this instruction with satisfactory results.—*The Medical Times*.

The Latin language may be considered a dead language, but it has saved the lives of thousands.

SUCCESS

is one of the best proofs of merit, for no matter what it is, whether it be a medicine, a typewriter or piano, it *must* have *merit* to succeed. Advertising and pushing may make it go for awhile, but without *merit* it will surely fail. Therefore, we think that the fact that we are moving our business from St. Louis to New York in order to have better facilities for handling it, to be nearer the source of supply for the various ingredients that enter in their composition, and to be nearer and more in touch with our foreign business, which has assumed large proportions, is one of the best proofs that can be offered as to their merits; and the fact that Celerina as a nerve tonic, Aletris Cordial as a uterine tonic, and S. H. Kennedy's Pinus Canadensis as a vegetable astringent, have stood the severest test of time from the medical profession all over the world, proves that they *must* be what we claim for them. And right here we want to tender our sincere thanks to the medical profession for the support and confidence that they have given us in our endeavor to present to them preparations of absolute strength, purity and uniformity.

Our address in future will be

**56 Thomas Street,
New York,**

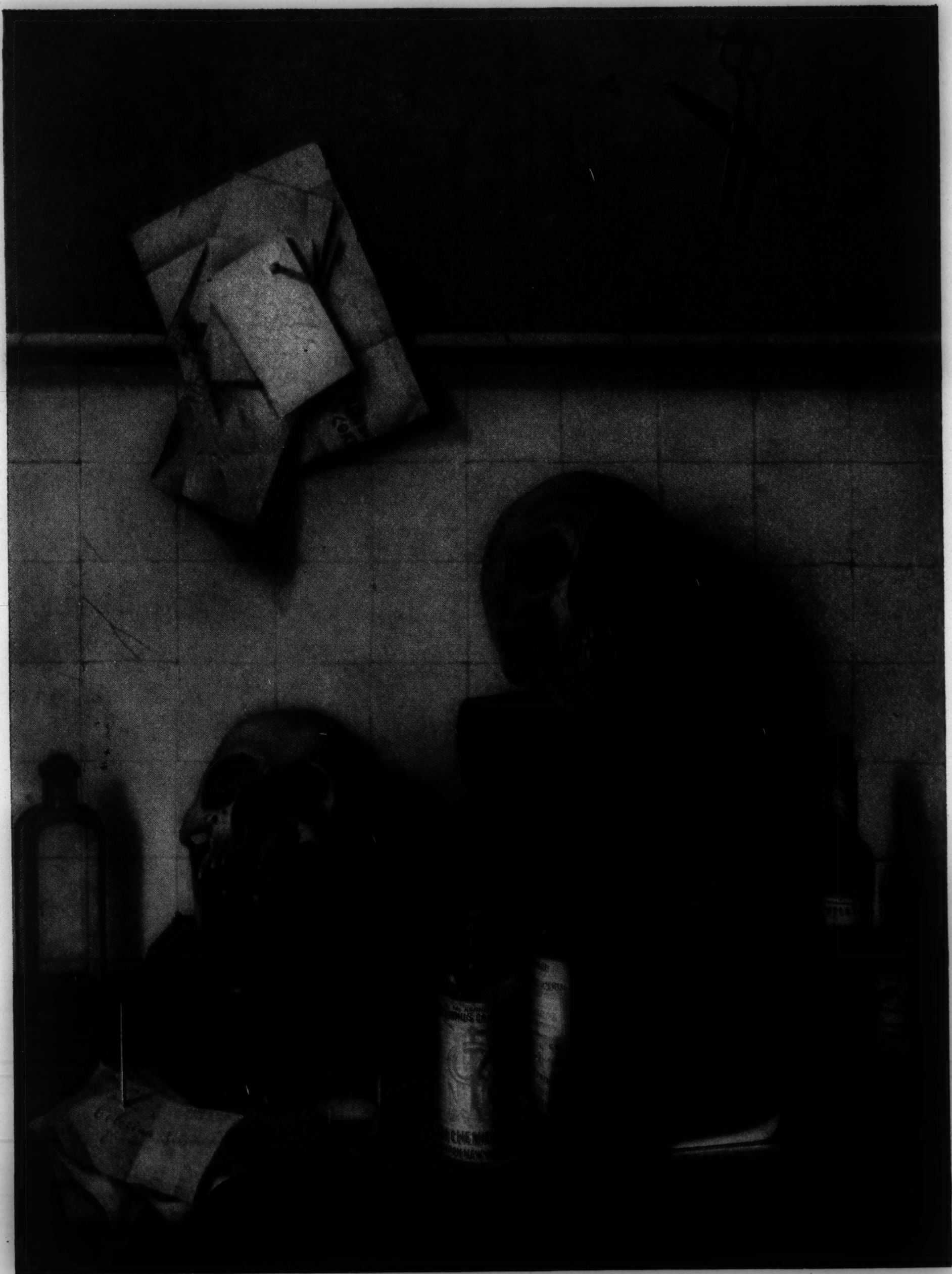
where all communications should be addressed, as we will have no office in St. Louis.

Send and get one of our magnificent albums, entitled "A Gallery of Pictures of Interest to Medical Men," containing twelve handsome colored pictures (no advertisements on face of them), on heavy plate paper; suitable for framing. Sent absolutely free, postage prepaid, one copy only. All extra copies twenty-five cents each.

Samples of Celerina, Aletris Cordial or S. H. Kennedy's Extract Pinus Canadensis sent free to any physician who will pay express charges.

Rio Chemical Co.,

56 Thomas St., New York



Copyright, 1901, by RIO CHEMICAL Co., N. Y.

AN OLD DOCTOR'S STUDY.

THE CALIFORNIA MEDICAL JOURNAL

Published Monthly.

\$1.50 Per Year, in Advance.

D. Maclean, M. D., Editor.

F. C. Maclean, M. D., Bus. Mgr.

WITH THE COLLABORATION OF

D. Maclean, San Francisco.	M. H. Logan, San Francisco.	John Fearn, Oakland.
Geo. G. Gere, San Francisco.	J. B. Mitchell, San Francisco.	Geo. D. Rich, Sonoma.
Chas. Clark, San Francisco.	Frank G. Fay, Sacramento.	B. Stetson, Oakland.
L. A. Perce, Long Beach.	Ovid S. Laws, Los Angeles.	L. F. Herrick, Oakland.
J. A. Munk, Los Angeles.	P. F. Bullington, Oroville.	W. S. Mott, Salem, Ore.
F. T. Lamb, San Francisco.	W. A. Harvey, San Francisco.	
B. Roswell Hubbard, Los Angeles.		

Contributions are Solicited from all Physicians.

CONTRIBUTORS are entitled to ten extra copies which will be mailed direct from this office if addresses are furnished. Reprints of articles will be furnished at cost if order accompanies Mss. Cuts necessary to illustrate articles will be made gratis.

SUBSCRIBERS will please notify us if Journal is not received regularly.

Drop Us a Postal Card When You Move, Giving Old and New Address.

ADVERTISERS will please take notice that forms close on the 20th of each month and no matter can receive insertion after that date.

Let all communications be addressed and money orders be made payable to the
 CALIFORNIA MEDICAL JOURNAL,
 1466 Folsom St., San Francisco, Cal.

Editorial.

The Year.

We have come to the close of the year and to the time of balancing our accounts and taking stock of things done and things undone. On the whole, as we look back on the past twelve months we are encouraged. Our year of apprenticeship is now over, and having mastered the first principles of medical journalism we are ready to apply our knowledge for the benefit of the cause we all love.

The Journal today is an improvement on the Journal of twelve months ago. It is larger, better printed, more attractive in every way. The subscription list is increasing, the advertising pat-

ronage growing. Our physicians have aided us willingly by their able contributions to our columns.

One thing that we have done we regard of greatest importance, that is, the establishment of the Southern California Department. It cannot fail to lead to a greater harmony, a better understanding between the two sections of the State.

This, then, we regard as our most important achievement during the past year, and we hope that twelve months from now we shall have accomplished something else of equal benefit to eclecticism.

And now we wish to extend our thanks to all for the encouragement and support we have received, and we wish each of our readers a very merry Christmas.

The New Hospital.

The city has voted to build a new hospital near the Alms House. It is a great necessity. The old building is becoming unfit as a habitation for the sick or well. But the location is questionable. The sun has not shown there for the past six months. Fog, dampness and high winds are the rule, sunshine the exception. In one word, it is unfit for a hospital. A home for the sick should have clear sky, dry air, good light and sunshine.

The selected location has none of the requisites for an ideal place. It is not centrally located nor convenient of access. If a change can be legally made it should be in the interest of the unfortunate.

No better selection could be made for the future hospital than the present location. It is free from fogs and has more sunshine than any other part of the city. If there are not sufficient grounds more can readily be obtained. We hope the powers that be, or are to be, will carefully consider the whole matter and make such a selection as can be approved by the thoughtful. There may be other locations that might be suitable but they are not in the neighborhood of the Alms House tract.

Editorial Notes.

Dr. H. Kloppe has moved from Dunnigan, Cal. to Kerby, Or.

Thanksgiving Day a very enjoyable reception was given at the Irving.

Dr. G. W. Bryant, of Truckee,

has been in town during the past month.

This month we have added four pages more to the Journal.

This is the time to show your good will by sending in your subscriptions for 1904.

The County Society.

The first Wednesday in November only a few members were present, consequently the Society adjourned until the third Wednesday in the month. This fell upon the eighteenth day of November. This was the tenth regular meeting. President M. Schirman called the meeting to order. After the roll-call the regular routine of business was transacted, during which time Dr. Childs was appointed to read a paper Dec. 2nd—title was not given—and also a paper will be read by Dr. Forster four weeks from date. Dr. Schirman then read his paper. He announced his subject as "Numbers." This was not strictly a medical subject, nor did he claim it as such. Interest was taken at once in his investigations, and it proved a change from the regular type of papers read at medical meetings. Discussions were entered into by Drs. Maclean, Hamilton, Gere and Atkins. Dr. Schirman closed with a few well-rounded remarks. Dr. Forster's paper will be entitled "Numbers in Relation to Periodicity."

A. B. NELSON, Sec'y.

At the recent meeting of the American Public Health Association held at

Washington the committee on vital statistics reported that effective co-operation had been instituted between that Association, the Conference of State Boards of Health, the American Medical Association, the United States Census Bureau and the United States Public Health and Marine-Hospital Service for the improvement of the vital statistics of this country. Among the objects sought are the extension of adequate methods of registration, the use of uniform and comparable tables and rates in bulletins and reports, and the improvement of the international classification of causes of death. A pamphlet on "Statistical Treatment of Causes of Death" has been issued by the United States Census Bureau, requests for which should be addressed to Mr. W. A. King, Chief Statistician for Vital Statistics, Census Bureau.

It has special reference to the difficulties encountered in compiling deaths returned from several causes, and asks for the co-operation of the profession in framing a thoroughly satisfactory method of procedure in such cases.

Reviews and Extracts.

A Case of Rattlesnake Bite Cured by Normal Tincture of Echinacea.

J. W. HARVEY, M. D.

In June, 1902, Mr. W. was working in a fruit orchard two miles from town. His son about seven years old came running to his father with a rattlesnake clinging to his leg. The father was obliged to kill the snake before he

could pull it off. He sprang on a horse with the boy and arrived in my office about twenty-seven minutes after the child had been bitten. The leg was considerably swollen. The bite was half-way between the malleolus and the knee joint. The wound was severe and lacerated. I immediately bathed the leg with Normal Tincture of Echinacea (Merrell's), and injected into the wound thirty drops of the same remedy, then saturated a bandage with the Tincture and tightly bound the affected part and gave instructions to keep the bandage wet with the Tincture. I prescribed thirty-drop doses every two hours for twenty-four hours.

Next morning on visiting my patient, I found the swelling had entirely subsided and there were no indications of constitutional poisoning. In three days the wound was healed. I continued giving thirty-drop doses of the Echinacea three times a day for a week. The prompt action of this preparation gave me great satisfaction.

I also had a case of a Japanese who had been bitten in the scrotum by a tarantula. The part was swollen to ten times its natural size. I applied a bandage of absorbent cotton saturated with Normal Tincture of Echinacea (Merrell's), keeping it wet with the Tincture for twenty-four hours, and administered drachm doses very two hours for the same length of time. At the end of the time there was no local swelling or other evidence of the poisonous effect of the insect's bite. I rely upon the Normal Tincture of Echinacea in all cases where this remedy is indicated.—*Therapeutic Digest.*

Glyco-Thymoline in Throat Affections.

—Aside from the value of Glyco-Thymoline as an application to the mucous membrane in various abnormal conditions, Dr. J. William Henry, of Brooklyn, considers it of great value in the treatment of diphtheria. In a recent case, a most severe attack, in which every symptom pointed to a discouraging diagnosis, Dr. Henry used Glyco-Thymoline by spray and swab in conjunction with the ordinary constitutional treatment, with the result that, much to his surprise and gratification, the crisis passed without serious trouble. In tonsilitis Dr. Henry has adopted the use of Glyco-Thymoline for some time, its action being rapid and the results very agreeable to the patient.—*New York Medical Journal.*

The Dietetic and Hygienic Gazette, commenting on the dietetic value of Iron, says:

"Pathologists have given pointers as to the special condition of the iron in the system and in the circulating medium, and the newer preparations aim to imitate that condition. Most of them have a brief day of fame and then drop out of sight for the reason that they lack some element of eligibility. Few are standing the test of time and the critical ordeal of the clinicians. Foremost among these it is safe to name Gude's Pepto-Mangan. It is probably the nearest approach to a physiologic reproduction yet devised. It deserves its universal popularity, and its manufacturers do well to restrict its sale to strictly ethical channels."

THE BEST OFFER EVER MADE BY A MEDICAL JOURNAL

The OKLAOMA MEDICAL NEWS-JOURNAL is giving to every new subscriber
as a present



A 14-K GOLD FOUNTAIN PEN

This is one of the best Journals of the South West, and is the Official Organ of the Oklahoma and Indian Territory Eclectic Medical Society.

Send \$1.00 today for your Subscription for 1904, and receive this gold fountain pen by return mail. Address—

Oklahoma Medical News-Journal,

Oklahoma City, Okla.

THE DECADENCE OF OPIUM.

We would not banish opium. But we would restrict it to its proper sphere. In the acute stage of most inflammations, and in the closing painful phases of some few chronic disorders, opium in galenic or alkaloidal derivatives, is our grandest remedy. But here the application should cease; and it is just here that the synthetic products step in to claim their share in the domain of therapy. Among the latter, perhaps none has met with so grateful a reception as Antikamnia Tablets. Given a frontal-temporal-vertical or occipital neuralgia, it will almost invariably arrest the head-pain. In the terrific fronto-parietal neuralgia of glaucoma, or in rheumatic or post-operative iritis, they are of signal service, contributing much to the comfort of the patient. They are of positive value in certain forms of dysmenorrhoea; they have served well in the pleuritic pains of advancing pneumonia and in the arthralgias of acute rheumatism. They have been found to allay the lightning, lancinating pains of locomotor ataxia, but nowhere may they be employed with such confidence as in the neuralgias limited to the area of distribution of the fifth nerve. Here their action is almost specific, surpassing even the effect of aconite over this nerve.—*National Medical Review*.

BATTLE & Co., Chemists, St. Louis.

I have the pleasure of telling you of a most remarkable experience had with the bottle of ecthol you kindly forwarded me last month. When I

received the sample of ecthol I had been treating a young man about ten days for what I diagnosed as ulcer of the stomach. For a year before coming to me he had occasionally seen dark colored blood in his alvine discharges, and now and then he had vomited blood of a lighter hue. There was an indurated spot on the body of the stomach about twice the size of a silver dollar which had been giving him trouble for some time. Could trace no history of cancer in his family. After putting him on teaspoonful doses of ecthol four times a day, he came to my office and smilingly told me the hard spot was gone. I examined him and found it to be true. During this last week he had been on ecthol alone. The vomiting had also ceased and he had gained in bodily vigor. Gave him a second vial of same, cautioned him as to eating and exercise, and discharged him in fine spirits. I wonder if this case can be matched?

JOHN F. NEAL, M. D.

Lytle, Texas, Oct. 14, 1903.

“The abstraction of blood from the deep blood-vessels into the superficial capillaries through physiologic innervation is physiological phlebotomy—Bleed, but save the blood—is the mechanics of Antiphlogistine.”

IRITIS.

In conjunction with local treatment.

Kalo Iodid..... 3 drms.

Tongaline 8 ozs.

M. et ft. sol.

Sig. A teaspoonful four times daily.

THE DAILY MEDICAL JOURNAL will be published January 1, 1904. We need a Physician as Staff Correspondent in every town in this State to supply us with scientific, social, institutional and personal news, and will pay regular newspaper rates for this service. Instructions, stationery, and BADGE from address,

MR. J. ANTONOWVITSCH,
154 East 72,
NEW YORK CITY.

A DOCTOR'S EPILEPTIC SON.

My son is doing splendidly; has had only one paroxysm in five months, which I am confident was caused by reducing the dose of Neurosine. I am determined to persevere in this treatment. Am having many inquiries from physicians as to the merits of Neurosine and I recommend it to those who have cases of epilepsy.

DR. G. W. GAMES, Hickory Flat, Ky.

LEUCORRHEA—I find Aletris Cordial Rio to be an excellent and palatable reparation. I have used it in cases of dysmenorrhea, irritable ovary, uterine congestion, leucorrhea, and endometritis, with the best of results. In a case of irritable ovary that had resisted all treatment for four years, I prescribed Aletris Cordial Rio, and after taking for four days the pain was entirely relieved. T. R. Dice, M. D., Utica, Mo.

ACUTE RHEUMATISM.

Tongaline.... 8 ozs.
M. Sig. A teaspoonful four or five times a day until pain is relieved. Then a teaspoonful three times a day.

Sanmetto in Difficult Cases of Cystitis, Prostatitis, Incontinence, Impotency and Hematuria.

I have used Sanmetto very extensively in my practice for years, and as evidence of my perfect satisfaction will say that I continue to prescribe it in all difficult cases. In cystitis, prostatitis, incontinence, impotency and many cases of hematuria I use Sanmetto with assurance of perfect success. In my female practice I find it the remedy *par excellence*, especially as a sexual tonic and a mammary rebuilders. I shall continue its use in typical cases. Princeton, Ind. O. L. Hudson, M. D.

"I prescribed Cordial of Cod Liver Oil Compound (Hagee) in a case most intractable case of loss of flesh and strength from hard mental work, which resisted all other remedies of like nature, and most signal results followed from the influence of your excellent Cordial. The nervous system improved, strength and flesh returning and general appearance much corrected. No loss of time from work."

W. L. Harris, M. D.

Necsho Falls, Kan.

Book Notes.

ALL BOOKS reviewed in these columns may be examined by prospective purchasers, at the JOURNAL Editorial rooms from 10 to 12 daily, within thirty days of the appearance of the review. We invite students to examine these publications. Publishers will please notify us of the net price of all books.

E. B. Treat & Co., 241-43 W. 23rd St., announce the following publications:

The Blues (Splanchnic Neurasthenia) *Causes and Cure*. This form of nervous weakness is so common as to render this volume of more than theoretic interest. By Albert Abrams, M. D.,

F. R. M. S. 8vo, 230 pages, illustrated, \$1.25.

Diseases of Metabolism and Nutrition; Part IV, Autointoxication.—By Prof. Dr. Carl von Noorden, Physician-in-Chief to the City Hospital, Frankfort-on-Main, and Dr. Mohr. Authorized American Edition. Edited by Boardman Reed, M. D. Small 8vo, 80 pages, 50 cents.

They have also recently issued the following books:

Plain Hints for Busy Mothers.—By Marianna Wheeler, Superintendent of the Babies' Hospital, New York. Flexible Leatherette, 35 cents.

Treatment of Disease by Physical Methods. Lectures on Electricity, Massage, Baths and Exercise. By Thomas Stretch Dowse, M. D., (abd) F. R. C. P. (Ed.) 4th Ed., small 8vo, 454 pages, illustrated; \$2.75.

Medical and Surgical Electricity. Including X-Ray, Vibratory Therapeutics, Finsen Light and High Frequency Currents. By A. D. Rockwell, A. M., M. D. New and Enlarged Edition, Royal Octavo, 672 pages, illustrated; $\frac{1}{2}$ Mor., \$6.00; Cloth, \$5 00.

Diseases of Metabolism and Nutrition. A series of Monographs. By Prof. Dr. Carl von Noorden, Physician-in-Chief to the City Hospital, Frankfort-on-Main, and assistants. Authorized American Edition. Edited by Boardman Reed, M. D., Philadelphia.

I. Obesity; small 8vo, 60 pages; Cloth, 50 cents.

II. Nephritis; small 8vo, 112 pages; Cloth, \$1.00.

III. Colitis; small 8vo, 80 pages; Cloth, 50 cents.

Red Head.—By John Uri Lloyd. Dodd, Mead & Co., N. Y., Publishers. Price \$1.60. Postage 14 cents extra.

Of course we all have a special interest in anything written by John Uri Lloyd, and we are particularly delighted by this his latest book. It has been ably reviewed as follows:

"Red Head" is a unique and wonderful character study. It deals with the emotions, passions, and superstitions of a strange boy—a boy who was abandoned to feud life. This boy is a unique creation. With the merit of sound historical construction and dignified literary treatment, this faithful portrayal of feud life in the wilds of Eastern Kentucky is linked together by a beautiful love story—a charming and striking feature of the swift running narrative.

The relentless and shocking cruelty on the one hand, the fearless and unflinching daring on the other, exhibited in equal measure by each of these strange beings, Red Head and Holcomb, and the constant watch for an opportunity to kill each other, are in sharp contrast to the constancy and profound devotion of the lovely heroine whose personality adds a lustre to the entire volume.

There is a matchless touch of pathos in the story told by Red Head to Professor Drew, his teacher, when called upon to explain why it was not wrong for him to carry a pistol. This explanation: "I'm the last Red Head," as melancholy and calamitous as it may sound, does not carry with it the entire tragic situation. The extinction of one family by another on account of some difference between them, all knowledge of the origin of which being lost in the fog of a forgotten past,

shows to what extent misguided and ignorant, though zealous people, hemmed in by narrow limits of life and opportunity, carried their family warfare in the rural Kentucky mountains of fifty years ago; and even to this day, in secluded and sparsely populated places along the Cumberland range, may be found remnants of these weird folks, who yet strive by strategy and blood-shed to maintain in lurid fidelity and intrepidity the dull traditions of their fathers.

While there is more of sadness than merriment in this story, it is not entirely lacking in humor. Red Head frequently maintains that something must be "did" to protect his family honor.

The story of Red Head's conviction and the vivid description of the awful tragedy that startled the little village of Stringtown is a distinct literary achievement on the part of Professor Lloyd. On account of this splendid work the book will take rank with the strongest works of our day; and on account of the attractive manner in which it is produced by the printer and binder, it will have a cordial welcome as a fine holiday presentation volume.

"Red Head" is a book of 220 pages, a work of art from a typographical standpoint. It contains ten full page illustrations and a cover design in colors by Mr. Reginald B. Birch. Each text page is beautifully decorated with scenes from the Stringtown country."

We heartily coincide with the above opinion, and we recommend anyone who is desirous of making a Christmas

gift to think of this book, which for all of our readers will have a double charm—that of a masterly work of fiction and that of the author's personality.

A Text-Book of the Practice of Medicine.—Designed for the use of Students. By James Magoffin French, M. D. Large 8vo, 800 pages, illustrated by ten full-page plates in black, colors and tints, and fifty wood engravings. Muslin, \$4.00 net; Leather, \$4.75 net.

This book, in point of size, is a reversion from the prevalent custom of constantly increasing the dimensions of student's text-books. The work is in no sense elementary, but discusses with commendable fullness all the subjects embraced in the more expanded treatises. Space has been saved not by omissions, but by the employment of a more comprehensive and concise style of composition, the avoidance of unnecessary repetition, and the omission of case reports, now generally admitted to have few advantages and many disadvantages.

French's Practice is a complete, able and well-written work, and possesses a distinct advantage over other Works on Practice now in the field, in its very newness. It has been written in the light of the most recent researches and discoveries in the science of medicine and with a full consideration for these, the result being a uniformity of treatment and a proper regard for values impossible in the older works, revised many times, and possibly with a view to economy in printers' bills. Beautiful illustrations and an

unusually complete and well-made index add to the advantages which we believe this work will be found to possess.

General Pathology.—By Dr. Ernst Ziegler. Tenth revised edition. Translated and Edited by Aldred Scott Warthin, Ph. D., M. D. Royal, 8vo, 784 pages, sumptuously illustrated by 586 engravings in black and many exquisite colors. Muslin, \$5.00 net; Leather, \$5.75 net.

Ziegler's Pathology is so much of a classic that it requires but little introduction to the teaching and student bodies in this country, having been the accepted authority in its line for nearly a generation. The tenth edition of the work, just published in Germany, shows a very radical revision in most of its departments. It is superfluous to say that it is up to date in every way and reflects in a remarkable degree the reputation of its distinguished author for clear, lucid and scientific treatment of the subject.

This edition has been translated and edited by Prof. Aldred Scott Warthin, of the University of Michigan, than whom there is probably no one in this country better fitted for the work. The original text has been rendered in clear and simple English form suitable to the needs of the medical student and reader. No alterations of the subject matter have been made, and the only additions are such as will adapt certain statements the better to their American environment. A feature of this translation is the retention of the bibliographies in full,

with the addition of the later American references, in the belief that they would be of the greatest value to the student, as well as giving to the book a completeness which it would otherwise lack.

Many new and colored illustrations also appear in this edition, which leaves little to be desired in the way of mechanical execution.

Year Book Series No. X.—Skin and Venereal Diseases and Nervous and Mental Diseases—The Year Book Publishers, Chicago, Ill. Price, \$1.25. Price of Series, \$7.50.

To the practitioner anxious to keep abreast with the times we heartily recommend this series of books. Arrangement in ten volumes makes it easy and convenient of reference. The present volume is devoted to the consideration of the skin and to mental and nervous disorders. The modern methods of treating neuropaths will be found of great interest.

A. B. C. of Photo-Micrography—A Practical Hand Book for Beginners, by W. H. Walmsley, F. R. M. S., F. A. AS. Published by Tenant & Ward, New York. Price, \$1.50.

This late work on photo-micrography fills a long felt want. It is the first work of any service to one totally unacquainted with this line and being written by one who had of necessity to work out the problem, he has made a special point of outlining the A. B. C. of the matter and in such simple language that the beginner cannot fail to appreciate its usefulness in the enlarging field of Photo-micrography.

INDEX

VOLUME TWENTY-FOUR.

JANUARY TO DECEMBER, 1903.

	PAGE.
Book Notes.....	53, 119, 209, 240, 272, 302
Bubonic Plague in San Francisco.....	S. B. Nyak, M.D. 185
Burns and Scalds, Treatment of	B. R. Hubbard, M.D. 295
Case of Ventro-Fixation.....	O. C. Welbourn, M.D. 294
Case of the Pregnant Woman.....	D. Maclean, M.D. 189
Case of Tuberculosis of the Kidney.....	E. H. Mercer, M.D. 191
" Subnormal Temperature.....	A. B. Nelson, M.D. 220
Care of the Infant.....	W. S. Gibson, MD. 231
Cleft Spine and Its Treatment	B. R. Hubbard, M.D. 233
Climatology of the Southwest.....	J. A. Munk, M.D. 257
Climate of San Bernardino County	H. C. Dorman, M.D. 292
Cactus Flowers.....	O. S. Laws, M.D. 260
Cactus Grandiflorus.....	Lydia Ross, M.D. 6
Degrees of Urine and How Generated.....	M. Schirman, M.D. 21
Down Hill Pull, A.....	P. L. Hamilton, M.D. 132
Dioscorea Villosa.....	Chas. Mealand, M.D. 159
Diphtheria.....	A. S. Tuchler, M.D. 193
Dispensing vs. Prescribing.....	W. C. Bailey, M.D. 215
Delayed Union and Ununited Fracture.....	E. Lanphear, M.D. 250
Editorial.....	9, 29, 49, 69, 89, 111, 147, 177, 205, 239, 263, 297
Erysipelas.....	A. S. Tuchler, M.D. 63
Emotions as Related to Disease.....	R. A. Forrest, M.D. 104
Effects of Climatic Changes on the Body.....	F. J. Petersen, M.D. 160
Electrical Physiology, or Electro-Chemic Energy.....	A. J. Atkins, M.D. 275
Electrolysis in Endometritis.....	A. S. Tuchler, M.D. 225
Exercise.....	J. Dougal. 221
Fluid Medicines.....	G. G. Gere, M.D. 84
Fecal Toxemia.....	E. R. Harvey, M.D. 199
Fractures and Luxations.....	D. W. Rees, M.D. 229
Get Out of the Rut.....	W. M. Forster, M.D. 188
Heart Remedies and their Indications.....	N. A. Graves, M.D. 24
Human Anatomy.....	A. B. Nelson, M.D. 84
How to Treat Injuries of the Elbow Joint.....	J. T. Farrar, M.D. 129
Intestinal Obstruction.....	Chas. Clark, M.D. 125
Interesting Case of Brain Injury.....	A. Deardorff, M.D. 190

INDEX.

307

	PAGE.
Libradol in the Treatment of Shingles.....	P. F. Bullington, M.D. 101
Language that is Mute, The.....	A. B. Nelson, M.D. 130
Light—More Light.....	E. Noble, M.D. 245
Long Beach as a Health Resort.....	E. R. Harvey, M.D. 290
Medical Legislation.....	D. Maclean. 28
Microscope an Aid to Diagnosis, The.....	J. Dougal 248
Natural Salicylic Acid.....	C. E. Hudson. 68
Notes on Histology.....	J. Dougal. 82
Our Banquet.....	O. C. Welbourn, M.D. 136
Observations on Yosemite.....	J. A. Munk, M.D. 196
Pneumonia.....	G. P. Rich, M.D. 11
Points on the Diagnosis of Dilatation of the Stomach.....	43
Puerperal Infection.....	F. J. Petersen, M.D. 106
Query Box.....	L. A. Perce, M.D. 136, 170, 196, 228, 256, 290
Rational Medicine and Surgery.....	A. B. Nelson, M.D. 41
Retroversion.....	J. B. Mitchell, M.D. 162
Removal of Cystic Tumor.....	G. P. Gerichten, M.D. 223
Southside Villa.....	J. U. Lloyd 25
Surgical Treatment of Tubercular Peritonitis.....	A. J. Ochsner, M. D. 67
Southern California Department.....	135, 169, 195, 228, 255, 289
Specific Medication.....	O. S. Laws, M.D. 172
Septicemia.....	S. J. Smith, M.D. 254
Tape Worm Remedies.....	M. Schirman, M.D. 44
Triticum Repens.....	J. M. French, M.D. 46
Treatment of Fractures of Maxillary Bones.....	J. C. Perry 45
Three Medical Schools.....	F. J. Petersen, M.D. 61
Tonsils, Pathological Conditions of.....	H. W. Hunsaker, M.D. 81
Tubercular Peritonitis.....	J. B. Mitchell, M.D. 108
Treatment of Anemia.....	F. Euler-Rolle, M.D. 167
“ “ Infants and Children.....	W. S. Gibson, M.D. 261
Ultra-Violet Rays.....	A. S. Tuchler, M.D. 155
Veratrum Viride.....	A. W. Smith, M.D. 33-80
Vaccination.....	F. J. Petersen, M.D. 219
Whitehead Operation.....	D. Maclean, M.D. 84
X-Ray Cure of Sarcoma.....	J. W. Hamilton, M.D. 5
X-Ray Burns.....	J. W. Hamilton, M.D. 47

CONCLUSIVE EVIDENCE.

CHARACTER OF COMMENDATIONS.

Woman.

The subject of uterine disease reminds me that during the past six months I have had my attention drawn to a remedy that goes under the name of Dioivurnia, the formula of which is given, and having read the emphatic indorsement of Drs. J. B. Johnson, L. Ch. Boisliniere and H. Tuholske, three of the most eminent professors and practitioners of the city, I was induced to give Dioivurnia a fair and thorough trial, and I am convinced that in this product we have a valuable addition to our armamentarium in our battle against the enemies of the noblest work of God—Woman.

Editorial by the late I. N. Love, M. D., in the "Medical Mirror."

Pains of Dysmenorrhea.

I have given Dioivurnia a fair trial and found it useful as an uterine tonic and antispasmodic, relieving the pains of dysmenorrhea and regulating the uterine functions. I feel authorized to give this recommendation of Dioivurnia, as it is neither a patented nor a secret medicine, the formula of which has been communicated freely to the profession.

L. CH. BOISLINIERE, M. D.

Late Professor of Obstetrics, St. Louis Medical College.

Unquestionably of Great Benefit in Dysmenorrhea.

I have used Dioivurnia quite a number of times, sufficiently frequent to satisfy myself of its merits. It is of unquestionable benefit in painful dysmenorrhea; it possesses antispasmodic properties which seems to be exerted especially on the uterus.

Dr. H. TUHOLSKE.

Prof. of Clinical Surgery and Surgical Pathology, Washington University; Prof. of Surgery, Post Graduate School, St. Louis.

Neurosine vs. Epilepsy.

EPILEPSY.

I prescribed Neurosine for a patient who has suffered from epileptic convulsions for years and it just met the indications in her case perfectly, she has had only one convulsion since she began the use of Neurosine and that was occasioned by her not being able to get a sufficient quantity from her druggist.

DR. J. V. SWEENEY,
New York, N. Y.

I desire to thank you for what your valuable medicine Neurosine has done for my daughter, subject to epilepsy since a child of fourteen years, every month she always had an attack; commenced treating her with Neurosine, noticed a change after the third dose. Her sleep the first night after commencing the medicine, was more quiet and restful. My daughter has only had

one spell since using Neurosine, which was caused by her neglecting taking the medicine the first of this month, therefore, she had to suffer for it. I thought it my duty to write and tell you the good your medicine was doing, not only to my daughter, but to two other young ladies, suffering from this disease, epilepsy. I spent hundreds of dollars for medicines for my daughter and can truthfully say yours is the first medicine that has kept those dreadful spells off.

DR. ELLA BAKER, Indianapolis, Ind.

I am meeting with every success to be asked in the administration of Neurosine (Dios) for epilepsy.

DR. R. E. CALHOUN, Chestervill, Ill.

Full size bottle *Free* to Physicians not familiar with the merits of NEUROSINE and DIOVIBURNIA, they paying express. DIOS CHEMICAL CO., ST. LOUIS.

THE FAMILY LAXATIVE

THE IDEAL safe family laxative, known as SYRUP OF FIGS, is a product of the CALIFORNIA FIG SYRUP CO., and derives its laxative principles from senna, made pleasant to the taste and more acceptable to the stomach, by being combined with pleasant aromatic syrups and the juice of figs. It is recommended by many of the most eminent physicians, and used by millions of families with entire satisfaction. It has gained its great reputation with the medical profession by reason of the acknowledged skill and care exercised by the California Fig Syrup Co. in securing the laxative principles of the senna by an original method of its own, and presenting them in the best and most convenient form. The California Fig Syrup Co. has special facilities for commanding the choicest qualities of Alexandria senna, and its chemists devote their entire attention to the manufacture of the one product. The name—**Syrup of Figs**—means to the medical profession “the family laxative, manufactured by the California Fig Syrup Co.,” and the name of the company is a guarantee of the excellence of its product. Informed of the above facts, the careful physician will know how to prevent the dispensing of worthless imitations when he recommends or prescribes the original and genuine—**SYRUP OF FIGS**. It is well known to physicians that SYRUP OF FIGS is a **simple, safe and reliable** laxative, which does not irritate or debilitate the organs on which it acts, and, being pleasant to the taste, it is especially adapted to ladies and children, although generally applicable in all cases. Special investigation of the profession invited.

SYRUP OF FIGS

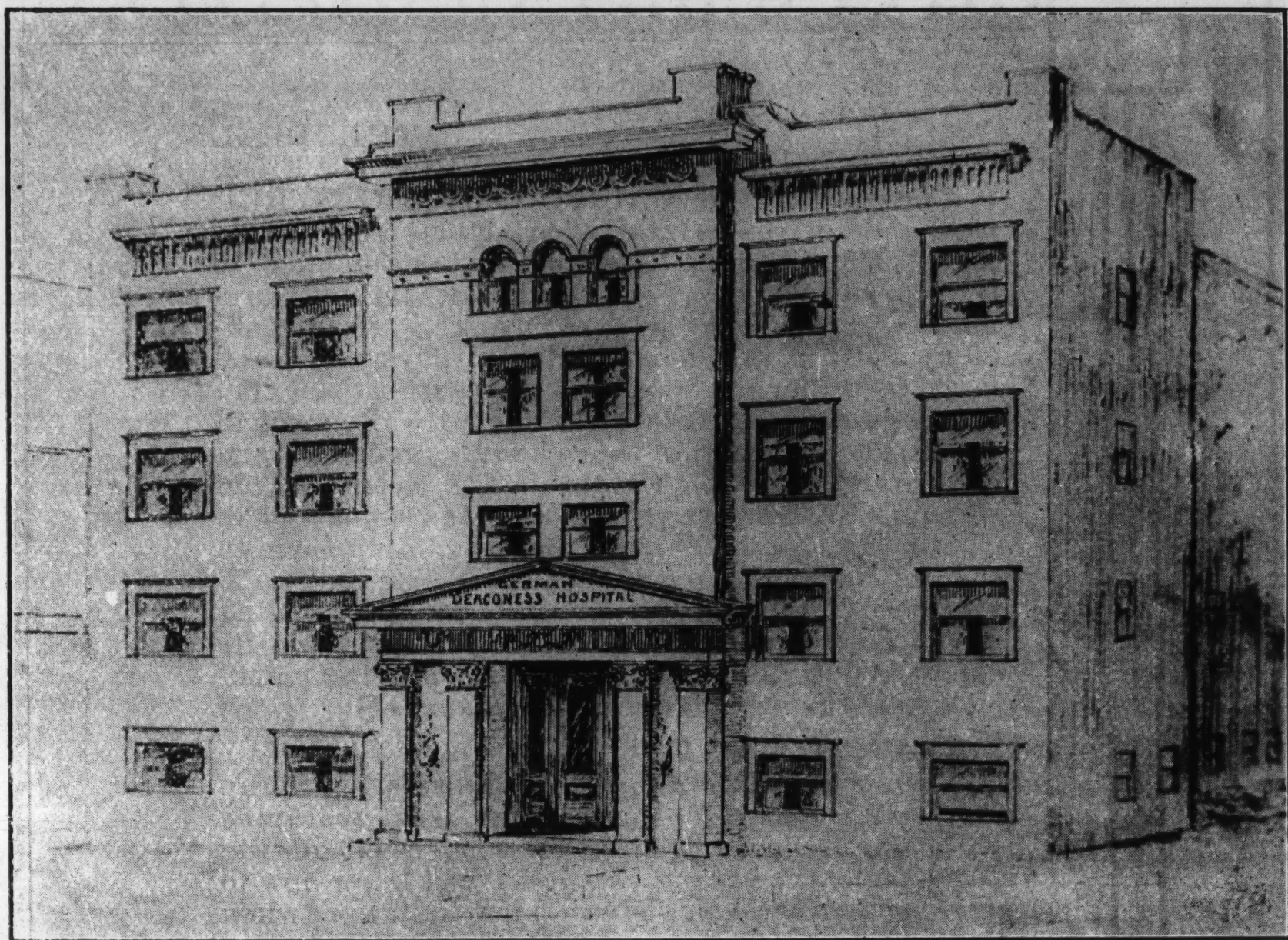
Is never sold in bulk. It retails at fifty cents per bottle, and the name—SYRUP OF FIGS—as well as the name of the CALIFORNIA FIG SYRUP CO., is printed on the wrappers and labels of every bottle.

CALIFORNIA FIG SYRUP CO.
 SAN FRANCISCO, CAL.
 LOUISVILLE, KY.
 NEW YORK, N. Y.

THE NEW GERMAN DEACONESS HOSPITAL

LOS ANGELES, CALIFORNIA

447 S OLIVE STREET



This hospital is pleasantly situated in a healthful location on the hillside adjacent to Central Park. It is only five blocks from the business center of the City, and the street car facilities are the best.

Both medical and surgical cases will be given every attention.

In construction and equipment this hospital will be absolutely first-class, especial attention being given to asepsis. It will have superior operating facilities. Each suite of operating rooms will be furnished with the latest pattern of sterilizing and operating fixtures and instruments. One operating room will be reserved for aseptic cases.

The charges will be moderate. Luxurious rooms will be furnished for those who wish such accommodations. Efficient graduate nurses will be constantly in attendance.

The building will be ready for occupancy about November 1st.

For further information, address REV. O. WILKE, Superintendent of Hospital, or,

DR. O. C. WELBOURN, Medical Director,

Room 303 Grant Building.

THE STAFF OF THE German Deaconess Hospital

J. A. MUNK, M. D.....	203 Grant Bldg., Los Angeles
<i>GYNECOLOGY.</i>	
M. BLANCH BOLTON, M. D.....	San Pedro
<i>CONSULTANT ON GYNECOLOGY.</i>	
O. C. WELBOURN, M. D.....	303 Grant Bldg., Los Angeles
<i>OPERATIVE GYNECOLOGY.</i>	
H. C. DORMAN, M. D.....	San Bernardino
<i>CONSULTANT ON OPERATIVE GYNECOLOGY.</i>	
HANNA SCOTT TURNER, M. D.....	Pomona
<i>OBSTETRICS.</i>	
B. ROSWELL HUBBARD, M. D.....	316½ S. Spring St., Los Angeles
<i>GENERAL AND ORTHOPEDIC SURGERY.</i>	
EDWIN FREEMAN, M. D.....	Pasadena
<i>CONSULTANT ON SURGERY.</i>	
D. W. REES, M. D.....	Needles
<i>CONSULTANT ON SURGERY.</i>	
J. C. SOLOMON, M. D.....	270 Wilcox Bldg., Los Angeles
<i>OPHTHALMOLOGY, OTOTOLOGY, RHINOLOGY AND LARYNGOLOGY.</i>	
J. C. BAINBRIDGE, M. D.....	Santa Barbara
<i>CONSULTANT ON OPHTHALMOLOGY, OTOTOLOGY, RHINOLOGY AND LARYNGOLOGY.</i>	
H. FORD SCUDDER, M. D.....	Palm Springs
<i>CONSULTANT ON OPHTHALMOLOGY, OTOTOLOGY, RHINOLOGY AND LARYNGOLOGY.</i>	
A. O. CONRAD, M. D.....	454 S. Spring St., Los Angeles
<i>ELECTRO-THERAPEUTICS AND ANÆSTHETICS.</i>	
J. B. SANDS, M. D.....	Ocean Park
<i>NERVOUS AND MENTAL DISEASES.</i>	
W. L. BROWN, M. D.....	S. W. Cor. Adams and Central Ave., Los Angeles
<i>SUGGESTIVE THERAPEUTICS.</i>	
L. A. PERCE, M. D.....	Long Beach
<i>BACTERIOLOGY AND CONTAGION.</i>	
C. P. V. WATSON, M. D.....	2652 W. Pico St., Los Angeles
<i>FEVERS.</i>	
W. P. FERGUSON, M. D.....	Santa Ana
<i>CONSULTANT ON FEVERS.</i>	
A. J. CRANCE, M. D.....	26 E. Colorado St., Pasadena
<i>DERMATOLOGY.</i>	
O. S. LAWS, M. D.....	184 N. Daly St., Los Angeles
<i>CONSULTANT ON DERMATOLOGY.</i>	
O. C. DARLING, M. D.....	Riverside
<i>GENITO-URINARY DISEASES.</i>	
Q. A. R. HOLTON, M. D.....	Whittier
<i>CONSULTANT ON GENITO URINARY DISEASES.</i>	
E. R. HARVEY, M. D.....	Long Beach
<i>PEDIATRICS.</i>	
J. H. CRAWFORD, M. D.....	Santa Monica
<i>CONSULTANT ON PEDIATRICS.</i>	
W. BYRD SCUDDER, M. D.....	Palm Springs
<i>DISEASES OF THE RESPIRATORY TRACT.</i>	

DOCTORS

SHOULD ALL TAKE A COURSE IN

CHEMISTRY AND PHARMACY

IN ORDER TO KEEP UP WITH THE TIMES.

Easy, Simple, Complete, Practical, Cheap, Quick, and by mail.

STUDENTS

will find it of great value before attending lectures. Do you want to be a Qualified and Practical Druggist as well as a physician?

SAMPLE LECTURES FREE.

👉 Our Graduates can Pass any Pharmacy Board. 👈

PRACTICAL DRUGGIST INSTITUTE. 120 Fulton St., New York

SURGICAL :: INSTRUMENTS



SUPPLIES,
SATCHELS,
MEDICINE CASES,
POCKET CASES,

And a General Line of SURGICAL
INSTRUMENTS.

GYNAECOLOGICAL INSTRUMENTS A SPECIALTY

Sole Agent for the ALLISON OPERATING TABLES.

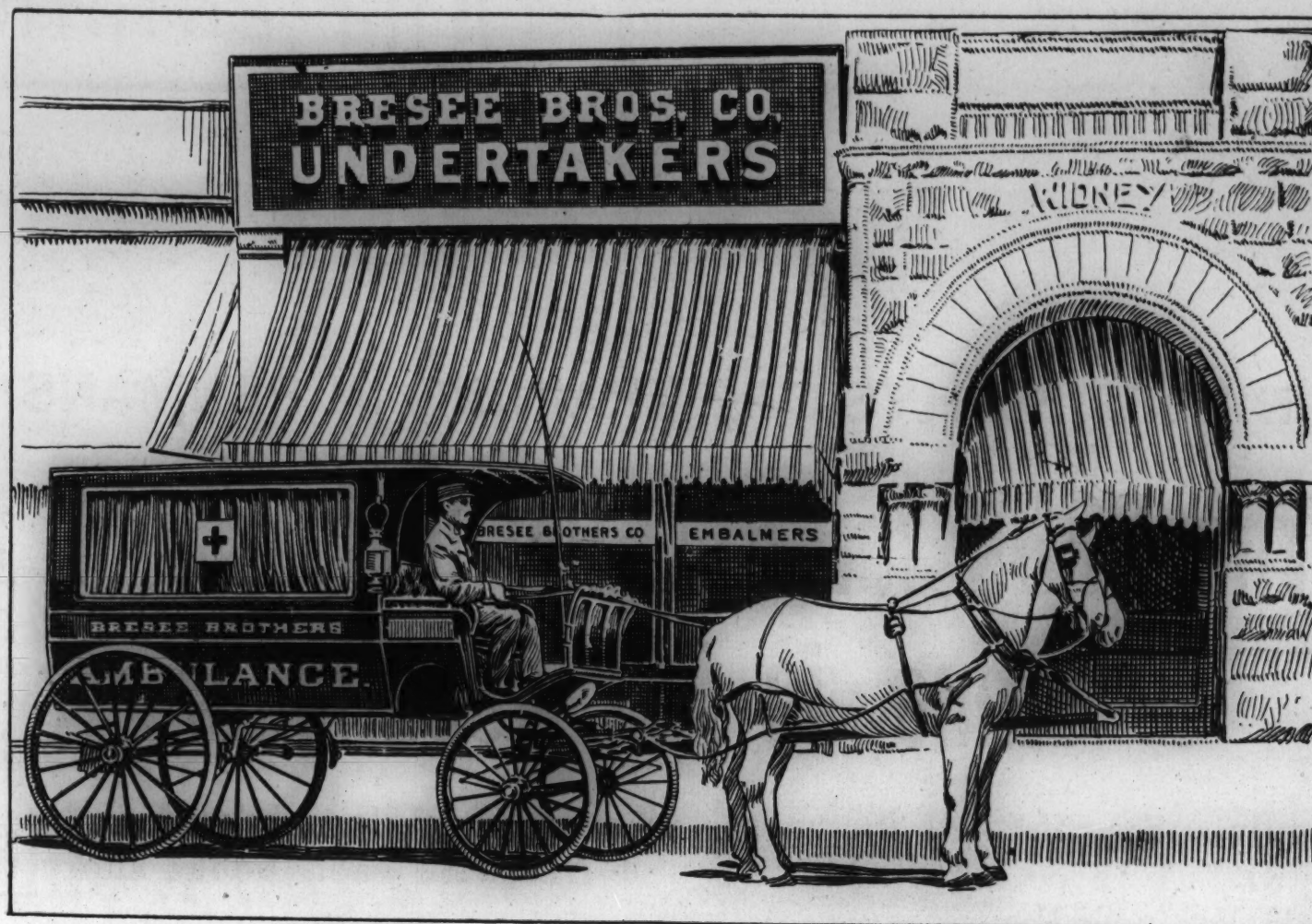
N. W. MALLERY, Rooms 111 and 112 Crocker Building
(610 MARKET STREET)

Tel. Main 612

San Francisco, Cal.

TEL. MAIN 243
HOME 243

Private Ambulance



**BRESEE BROTHERS Co.,
FUNERAL DIRECTORS**

BROADWAY AND S'XTH STREET

LADY UNDERTAKER.

LOS ANGELES, CAL.

THE
PRACTICAL MEDICINE

A MONTHLY JOURNAL OF GREAT PRACTICAL VALUE AND INTEREST
TO EVERY MEDICAL MAN.

FOREIGN SUBSCRIPTION FOUR SHILLINGS PER ANNUM.

NOW OCCUPIES A PROMINENT PLACE IN THE FRONT RANK OF
MEDICAL JOURNALS IN INDIA. THE ARTICLES ARE SHORT,
POINTED AND PRACTICAL, ESPECIALLY SUITED TO
THE BUSY DOCTOR.

Best medium for the announcement of books, instruments, and phar-
maceutical specialties and other articles generally required
by the profession.

LOWEST NET ADVERTISING RATES.

SPACE	1 MONTH	3 MONTHS	6 MONTHS	12 MONTHS
1 page	£2 10s.	£6 18s.	£12 8s.	£24
$\frac{1}{2}$ "	£1 10s.	£3 16s.	£6 18s.	£12 8s.
$\frac{1}{4}$ "	14s.	£2	£3 16s.	£7 4s.
$\frac{1}{8}$ "	8s.	£1 2s.	£2	£3 12s.

PAYABLE IN ADVANCE.

Address—

MANAGER,

"PRACTICAL MEDICINE,"

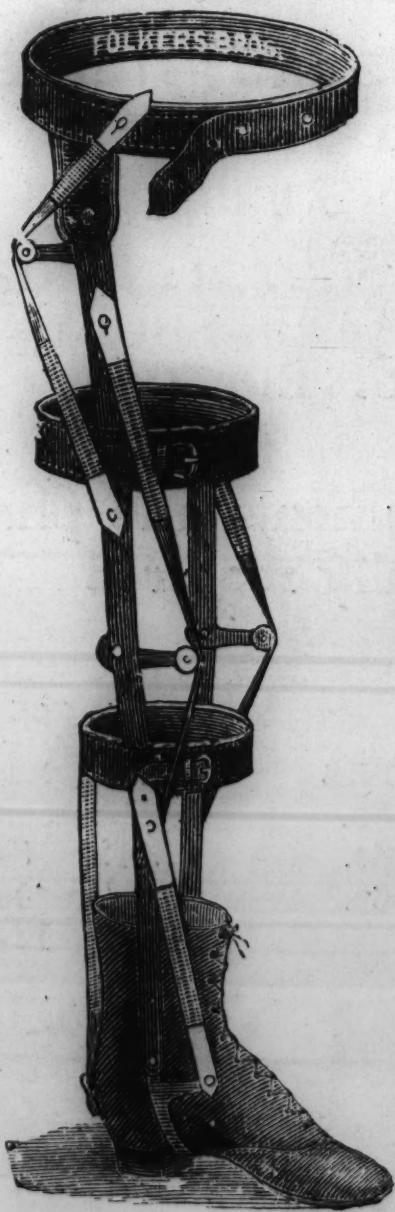
Egerton Street, **DELHI**, INDIA.

BIXLER'S PHYSICAL TRAINING IN PENMANSHIP

The BOOK for ALL the people ALL the time, in ALL vocations.

The only successful self instructor in easy, rapid, legible writing for 20 years. Price \$1. A three months' mail course free with each book; short time only. Sample BUSINESS PENMAN *free*.

Professor G. BIXLER, Madison and Ogden, Chicago, Ill.



TELEPHONE BUSH 431.

G. A. W. FOLKERS

SUCCESSOR TO

J. H. A. FOLKERS AND BRO.

IMPORTERS OF

SURGICAL INSTRUMENTS

Static Machines & X-Ray Apparatus

MANUFACTURERS OF

TRUSSES and APPARATUS for DEFORMITIES, Etc.

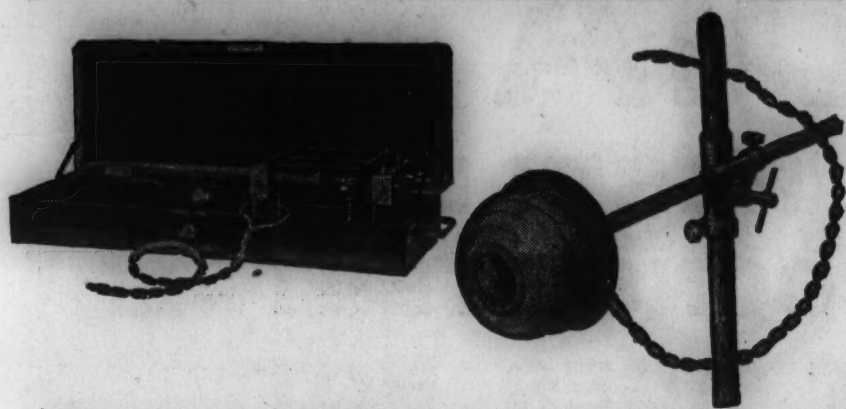
ELASTIC STOCKINGS and BELTS

LADY ATTENDANT FOR LADIES.

809 MARKET STREET, (Room 4, Flood Building.)

SAN FRANCISCO.

VIOLET RAY Apparatus \$100



The source of the Violet Ray is a diminutive arc lamp (shown on the right) mounted on a slate base with nickel cover and crystal lens. Iron electrodes are used instead of carbon. Cut shows apparatus with transformer at the right-hand corner of the box.

Reliable—easily controlled—uses only 4 amperes, any alternating current, and costs only 6c. to 8c. an hour to run.

Kinraide X-Ray Coil

Reliable Static Effects

Connected with Any Incandescence Lamp

ILLUSTRATED BOOKLETS FREE

SWETT & LEWIS CO.

657 C BOYLSTON ST., BOSTON, MASS.

ECLECTIC MANUALS.

ECLECTIC MANUAL No. 1.

A Syllabus of Eclectic Materia Medica and Therapeutics. By Frederick . Locke, M. D., Dean and Professor of Materia Medica in the Eclectic Medical Institute, Cincinnati. 12mo., 461 pages, cloth, \$2.50.

ECLECTIC MANUAL No. 2.

On the use of Medicated Inhalations. By the late John M. Scudder, M. D., with an appendix on Diseases of the Nose and Throat, by Wm. Byrd Scudder, M. D. 12mo., 159 pages, 75c.

ECLECTIC MANUAL No. 3.

A Compendium of the Practice of Medicine, according to the doctrines of Specific Medication. By Lyman Watkins, M. D., Professor of Physiology in the Eclectic Medical Institute, Cincinnati. 12mo., 460 pages, cloth, \$2.50.

ECLECTIC MANUAL No. 4.

Diseases of the Eye. By Kent O. Foltz, M. D., Professor of Diseases of the Eye in the Eclectic Medical Institute, Cincinnati, O. 12mo, 566 pages, cloth, \$2.50.

A Complete 8-page price list of these and other Eclectic books sent on application to

John Fearn, M. D.,

Box 1, Oakland, Cal.



GLYCO= THYMOLINE FOR CATARRHAL CONDITIONS

Nasal, Throat

Intestinal

Stomach, Rectal

and Utero-Vaginal

KRESS & OWEN COMPANY

210 FULTON STREET NEW YORK

**BROMIDIA IS A
REST-MAKER FOR RESTLESS-
NESS. IT GIVES CONSISTENT
NERVE REST. IT DOES NOT
LESSEN THE SUPPLY OF BLOOD
TO ANY ORGAN OF THE ECON-
OMY, AS THE BROMIDES ARE
SURE TO DO. IT IS A HYPNOTIC.**

**FORMULA:--15 grains each Chloral Hydrate
and Purified Brom. Pot. and 1-2 grain
each Gen. Imp. Ext. Cannabis Ind. and
Hyoscyamus to each fld. drachm.**

**ECTHOL
IODIA
PAPINE**

BATTLE & CO., CHEMISTS CORPORATION, ST. LOUIS, MO., U. S. A.

CACTINA PILLETS

**Has many Advantages over other
Heart Stimulants**

Each pillet represents one one-hundredth of
a grain CACTINA, the active proximate
principle of CEREUS GRANDIFLORA..

Dose:

One to four pillets three times a day

SAMPLES MAILED TO PHYSICIANS ONLY

SENG

**Promotes Normal Digestion by encouraging the
flow of Digestive Fluids**

**A Most Successful Treatment for
INDIGESTION**

A palatable preparation of PANAX
SCHINSENG in an aromatic essence

DOSE: One to two teaspoonfuls three times a day

*A full size bottle, for trial, to phy-
sicians who will pay express charges*

SULTAN DRUG COMPANY, St. Louis, Mo., U. S. A.

PEACOCK'S BROMIDES



PEACOCK'S BROMIDES

The Purest Form of Bromides.
Each fluid drachm represents 15 grains
of the combined C. P. Bromides of Potas-
sium, Sodium, Calcium, Ammonium and
Lithium.

DOSE:

One to three teaspoonfuls according to
the amount of Bromides required.

Full size sample to physicians who will pay express charges
PEACOCK CHEMICAL CO., ST. LOUIS

CHIONIA

From Chionanthus Virginica.

Re-establishes portal circulation with-
out producing congestion. Invaluable in
all ailments due to hepatic torpor.

DOSE: One to two teaspoonfuls three
times a day.

CHIONIA



The only Emulsion of Olive Oil on the Market.

A STEP FORWARD!

Clean, palatable, miscible in any vehicle, can be digested by the weakest stomach.

Given in connection with iodide of lime is far superior to the heavy, indigestible Cod Liver and Petroleum Oils and Emulsions,

Prepared from our own Olives by improved process without crushing the pit.

A. V. STUART CO.

GROWERS & MANUFACTURERS
San Jose, Cal.

ADVENTURERS WILL NOT PERSIST IN ANNOYING

Physicians, Surgeons and Dentists

who are protected against suits for alleged MALPRACTICE by a policy in
The Fidelity and Casualty Company of New York.

THIS company will defend its clients against any such proceedings at its own cost, and if damages are awarded will pay same up to Two Thousand Five Hundred Dollars for injuries suffered by one person, or Five Thousand for injuries suffered by more than one person for a premium of Ten Dollars a year. Insurance for double above amounts at same ratio.

Agents in all considerable towns.

Special forms of Accident and Health Insurance for Physicians, Surgeons and Dentists.

SANMETTO FOR GENITO-URINARY DISEASES.

A Scientific Blending of True Santal and Saw Palmetto in a Pleasant Aromatic Vehicle.

A Vitalizing Tonic to the Reproductive System.

SPECIALLY VALUABLE IN
PROSTATIC TROUBLES OF OLD MEN—IRRITABLE BLADDER—
CYSTITIS—URETHRITIS—PRE-GENILITY.

DOSE:—One Teaspoonful Four Times a Day.

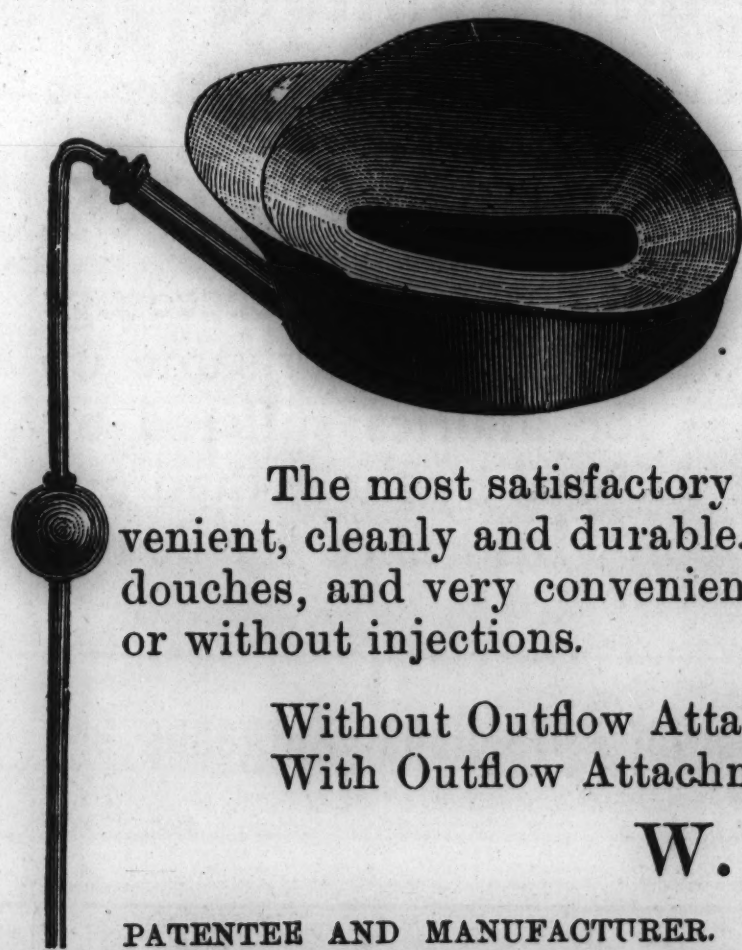
OD CHEM. CO., NEW YORK.

PASSIFLORA

A Physician of 30 years' experience says: I have used DANIEL'S CONCT. TINCT. PASSIFLORA INCARNATA to Quiet Nervousness, Insomnia, and in Convalescence after Typhoid Fever. I have also given it to Women suffering from Endometritis and Irritation from Ovarian Trouble. In cases of Insomnia due to alcoholic excess, I find it induces normal sleep, and where a calmative is needed PASSIFLORA is excellent.

*Write for Literature
Sample Supplied, Physician
Paying Express Charges*

Laboratory of
John B. Daniel, Atlanta, Ga.



SEARBY'S HOSPITAL BED PAN (U. S. Patent.)

The most satisfactory Bed Pan in use. It is light, capacious, convenient, cleanly and durable. It is especially adapted to copious vaginal douches, and very convenient for receiving rectal discharges, either with or without injections.

Without Outflow Attachment	\$2.50.
With Outflow Attachment	\$3.50.

W. M. SEARBY,

PATENTEE AND MANUFACTURER.

400 Sutter Street, San Francisco.

PAPER

This JOURNAL is printed on our "ALBION BOOK."

We carry a full stock of all kinds. **Powder Papers** a specialty. Samples and quotations promptly given.....

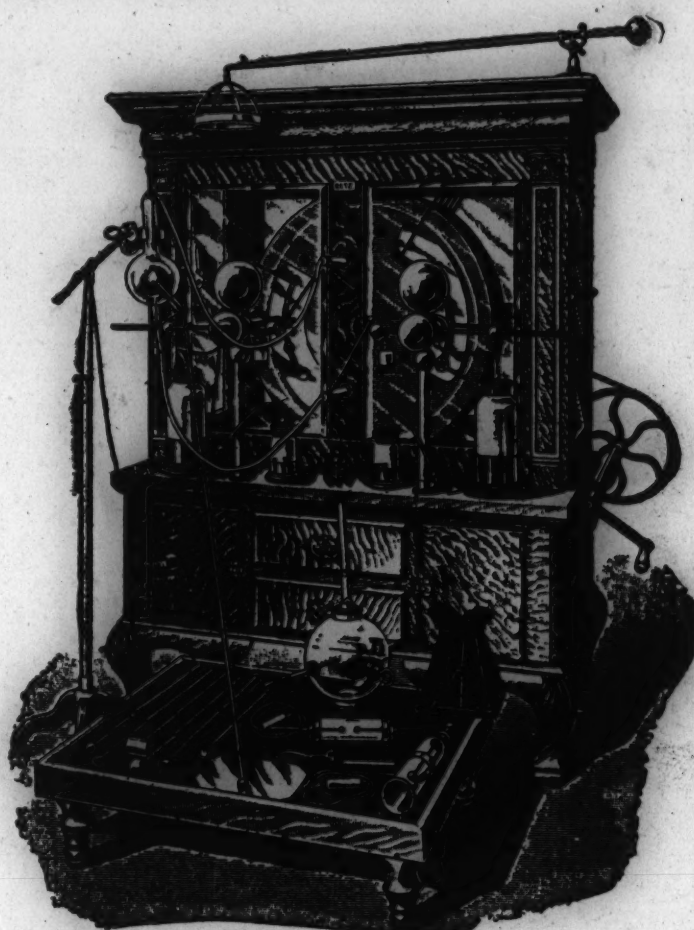
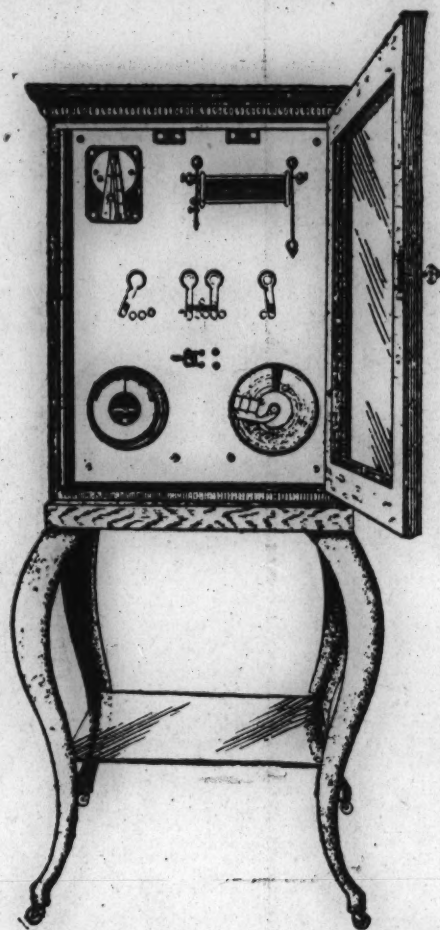
BONESTELL & CO., 401-403 Sansome St.,
500-508 Sacramento St., San Francisco.

✂ Don't Wait Until Tomorrow ✂ Write Us Today ✂

\$500 invested by a live doctor will bring in from \$5,000 to \$10,000 extra per year. We give you pointers from time to time and tell you just what to do and how to do it. Over 400 places fitted up so far this year. Let us fix up your office. Ask for full particulars regarding our method of making from \$5,000 to \$10,000 a year and we will be glad to tell you.

This Galvanic and Faradic Battery Outfit

Leads the World!!!



Money back if not satisfied after

you use it 30 days.

BOOK FREE.

WE MAKE AND SELL

\$400	Static and X-Ray Machines..	\$200.00	\$ 25	Buchanan Table.....	12.00
(We make and sell over 100 monthly.)					
\$500	X-Ray Coils.....	250.00	\$ 6	Stools, Metal.....	3.50
\$ 35	1/4 H. P. Motors, direct Current.....	24.00	\$ 7.50	Chairs, Metal.....	4.00
\$ 12	Rheostat for above.....	6.00	\$ 85	Galvanic & Faradic Battery..	40.00
\$ 65	1/4 H. P. Motors, Alternating Current.....	45.00	\$ 75	Nebulizer.....	50.00
\$ 25	Controller for above.....	15.00	\$ 25	Compressed Air.....	16.50
Dynamos for light, any size.			\$ 12	Double Lever Pump.....	7.50
\$125	1 1/2 H. P. Gas Engine.....	75.00	\$100	Violet Ray Outfit.....	30.00
\$125	1 1/2 H. P. Gasoline Engine.....	75.00	\$ 40	Invalid Chairs	20.00
\$ 35	1/4 H. P. Water Motor.....	15.00	\$ 8	Glass Shelf Table.....	5.00
\$125	Betz Buzzer.....	50.00	\$ 6	Silk Supporters.....	2.50
\$ 15	Centrifuge.....	7.50	\$ 2.50	Trusses, calf covered.....	1.00
\$ 90	Ferguson Chair-Table.....	35.00	\$ 30	Mueller X-Ray Tubes.....	14.00
\$ 75	Baldwin Table.....	40.00	\$ 70	X-Ray Screens, 16x20.....	35.00
\$ 45	Orrowtosky Table.....	25.00	\$ 15	Flourosopes.....	7.50
			\$ 6	X-Ray Specula, Set 4.....	2.50
			\$ 25	Transformer and Caution....	15.00

BETZ DRY HOT AIR APPARATUS LEADS THE WORLD!!

Use them on any case of Rheumatism or Joint Troubles and send them back if you fail to cure and we will refund your money.



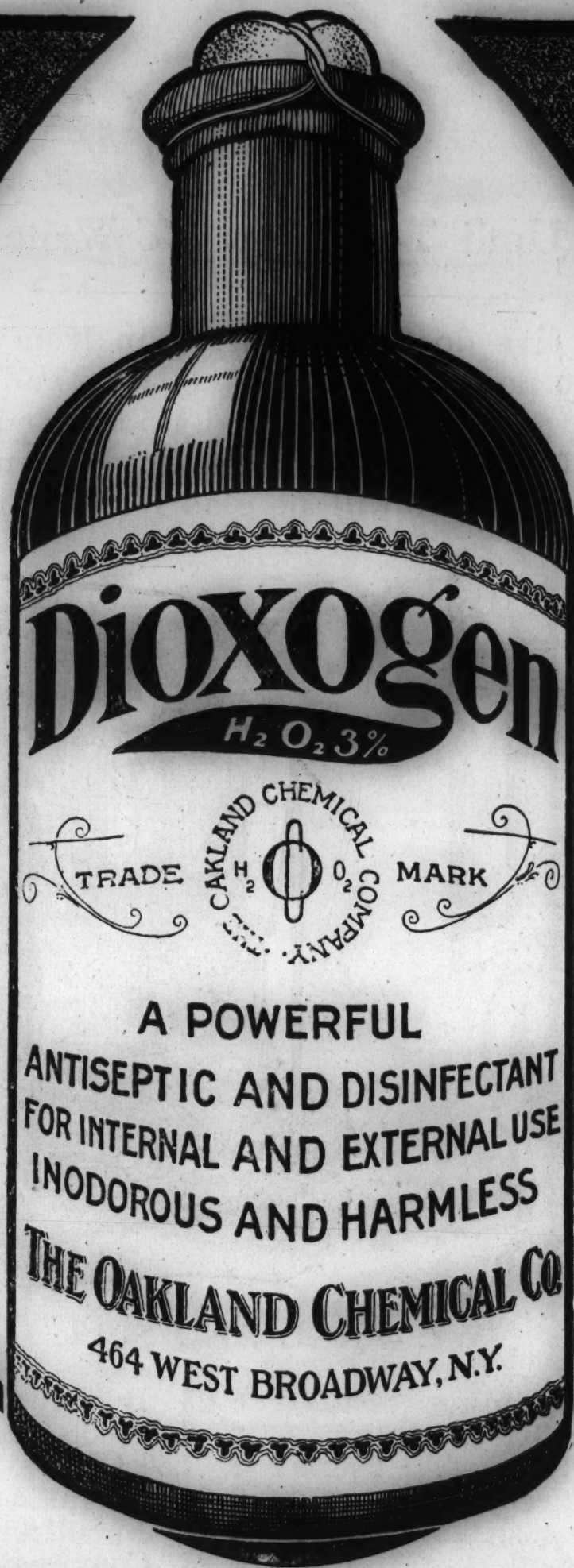
BULLETIN OF 5,000 ARTICLES FREE.



FRANK S. BETZ, & Co.,

35, 37 Randolph St., Chicago, Ill.

THE KIND
THAT
KEEPS



BOTTLES
DO NOT
EXPLODE